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The REPEATER JOURNAL

CAROLINAS – VIRGINIA REPEATER ASSN., INC.
ORGANIZED 1971

May 1, 1975 Volume 4 No. 2

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ALSO 1975 VOLUME III

CAROLINAS-VIRGINIA REPEATER ASSN. INC. DIRECTORY & DATA BOOK

This issue of "The Repeater Journal" also contains the CVRA Annual Directory and Data Book. Within this issue there is a description of each member repeater in the CVRA including coverage area, equipment description, and the individual or club involved in its upkeep. Additionally there are articles covering the organization of the CVRA, how Frequency Coordination is being accomplished, copies of current VHF/UHF Band Plans, and numerous others.

The repeater information contained herein has been taken from current membership applications submitted by the individuals or clubs who own and operate the repeaters. Some applications contained complete details in every area, while others were very brief and lacking the data desired. In any case, the data contained in the applications have been reproduced here as accurately as pc

The regular quarterly features of the "Journal" are also contained in issue. Look for the listing of two meter repeaters by frequency, C Calendar, Net Register, and the listing of repeaters by state.

The Journal is a quarterly membership service of the CVRA and i depend on material submitted by members for publication. Keep informed as to activities in your area through the "Journal"

CVRA REPEATER JOURNAL & DIRECTORY

TABLE OF CONTENTS

Page	Title
4	CVRA Officers & Directors
6	73 Hotline Highlights
8 - 11	What is the Carolinas-Virginia Repeater Assn?
12 - 14	The Repeater Conflict on 16/76
14	News Briefs
15	News Briefs
16 - 21	Individual Repeater Descriptions
22 - 23	Your Home Repeater
24	Band Plans for 144 & 220 mHz
25	Band Plans for 442 & 50 mHz
26 - 27	Repeaters in the Carolinas & Virginia
28	Distribution of Two Meter Repeaters
29	Club Meeting Calendar
30	Net Register
31	How High is That Two Meter Repeater ?
32 - 33	What is a Repeater?
34 - 36	Frequency Coordination and Control Procedures
36	Repeater Tips -- Do's and Don'ts
37 - 44	Individual Repeater Descriptions
45	Districts of the CVRA
46	News Briefs
47	How to Interface the Trimline Touchtone Pad to Your Rig.
49	More Highlights from 73 Hotline
50	Two Meter Repeaters in Florida
51	News Briefs
52	Membership Application

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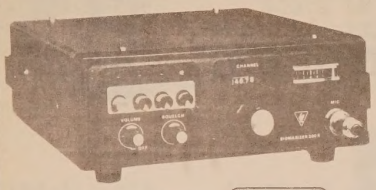

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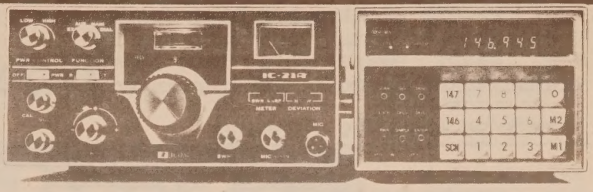

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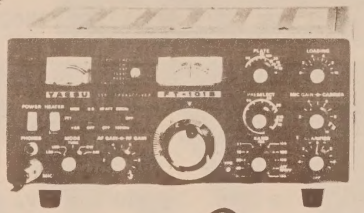

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"THE REPEATER JOURNAL" ..... is published four times a year for members of the "Carloinas-Virginia Repeater Association, Inc.

Permission is granted for quoting from the "JOURNAL" provided credit line is given.... a copy to the Editor would be appreciated.

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Advertising rates available from the Editor.

This Newsletter is swapped to other Repeater Councils for copies of their Newsletters.

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Membership in the CVRA is $ 2.00 per year. Write for application.

Address all correspondence to: 6210 Gothic Court, Charlotte, NC 28210

CVRA OFFICERS & DIRECTORS

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DIRECTORS AND VICE DIRECTORS

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Southern District				
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V Dir	K4OKD	Cliff Semken 436 Wallace Dr	Charleston, SC 29412	803-795-1920
Coastal District				
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V Dir	W4NTQ	Eddie Sellers 1004 N. Powell Blvd	Whiteville, NC 28472	
Mountain District				
Dir	WB4MOV	Hank Holcomb 513 Atlanta Ave.	Lynchburg, Va 24502	804-239-4736
V Dir	W4PDL	Al Dyson 1848 Skycoe Dr	Salem, Va 24153	703-389-3974
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V Dir	K4ITL	Danny Hampton 550 Granite St	Raleigh, NC 27608	919-832-8733
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V Dir	K4PQD	Tom Gimbert Rt 1 Box 18	Rixeyville, Va	
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V Dir	WA4NUO	Ralph Roberts Rt 1 Box 284	Alexander, NC 28701	704-254-3972

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Repeater Membership				
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Editor				
	K4GHR	Bill Parris 6210 Gothic Ct	Charlotte, NC 28210	704-365-1150
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CLUB BULLETINS PLEASE NOTE

One point was made very clear during the recent FCC closed hearing on the possible CB use of the amateur 220 MHz band and that was the self-policing of the amateur service. Several of the Commissioners commented on this and it was a strong factor in our favor. The fact is that amateurs can do a lot more along this line.

Self-policing the amateur bands has gotten a bad name with many amateurs because a few of the Official Observers appointed by the ARRL have been so overbearing. Even this small amount of authority is more than some people can handle. It is difficult to call a chap on the air and tell him that something is wrong with his signal or his operating – few of us take this kindly. We don't want to hear that our rig is in trouble or that we are being inconsiderate. Yet these messages do have to be told.

The reputation of amateur radio is at stake, so bite the bullet when you hear someone with a bum signal or bum operating tactics. Try to be helpful and polite – absolutely refuse to get perturbed no matter how abusive he becomes – if it really gets your goat make a tape of it and play it at the next club meeting – or send a cassette to 73 for possible inclusion in a "worst of amateur radio" cassette.

The less amateurs embroil the FCC in their problems the better. If you run into any serious problems try to enlist the help of nearby amateurs in solving it. Difficult as it may seem, handling our own problems is for the long range benefit of amateur radio. Think in terms of years, not minutes or hours. Jammers can be located if they persist . . . and they can be reasoned with – one way or another.

WHEN NOT TO OBEY RULES

A cassette was received at the Hotline/73 HQ made off the air of the talk-in and capture of a CBer who turned up on WR1ABQ in Derry NH using a stolen rig. Rather than telling the bewildered chap to get the hell off the repeater the fellows quickly shifted to handles and got to work finding out where the CBer was, then talking him into coming together with them for coffee.

It went fairly smoothly except when one dense individual got on and insisted on using calls (until they got him on the telephone and clued him in). The fact is that the FCC is able to stand it if you do not sign calls for an extended period of time if you have a legitimate reason . . . or, as in this case, an illegitimate reason.

This type of operation is perhaps as good an answer to the problem of stolen rigs as any. If CBers are properly dense and start talking before they listen much, you might be able to entrap them. The odds are good.

REPEATERS

A report and order is expected soon on the crossbanding of repeaters docket. Look for favorable action on this one.

This was one of the matters brought up at the January 14, 1974 hearing before the FCC and which, with the encouragement of Chairman Wiley and Charlie Higgenbotham, was introduced as a petition – became a docket – and has been going the rounds of the Commission before being released.

This should greatly help repeater groups anxious to open up the 220 MHz band – and expand 50 MHz repeater operations. The fact is that large parts of the ham bands have been almost entirely unused as a result of this severe restriction on amateur ingenuity and invention.

FCC work on the automatic control of repeaters rules is well along too – another item covered in depth at the FCC hearing.

CHARLIE'S PHONE NUMBER

You, too, can call the FCC and find out what is happening, should your involvement become such that you can't even wait for Hotline to bring the Hot Poop. There is a recorded message available of the latest FCC actions on 202 632-0002. General information about public notices can be had by calling 202 632-7260. The amateur division crowd can be reached via 202 632-7175.

FCC SAYS NO NO

Oscar users have been frustrated by a W6 running much more than the requested 100 Watts on the 2m/10m link – he's been running 140 Watts and a 22 element beam, it is reported. After three letters from Amsat requesting him to lower power and stop hogging the satellite, all of which were ignored, the FCC was called into the picture. The FCC then wrote to him and asked for compliance and this letter was also ignored. Then the FCC wrote one more last letter, explaining that the regulations specify that a minimum power necessary for a contact be used, and they hand delivered this to the chap.

It is a real pity that there are thousands of amateurs who try so hard to make amateur radio enjoyable for everyone, only to have one inconsiderate person spoil the fun.

10m FM SIMPLEX

Interest has been increasing in 10m FM. The simplex channel is 29.6 MHz. The fact is that the band opens every now and then for long haul FM contacts. Some day the FCC may again permit 10m repeaters in which case there will be a lot more activity on the high end of 10m as 10m ground wave is substantially better than the higher bands and has many advantages in areas where the extra coverage is important. Repeaters for 10m were just starting to develop when the FCC repeater rules were changed to prohibit them. No satisfactory explanation was ever given for this.

AN EXPERIMENT IN COOPERATION

Los Angeles area law enforcement officials are extremely pleased with the initial success of utilizing the capabilities of volunteer amateur radio operators as an aid in extending the effectiveness of their activities in the prevention of crime. For approximately the past five months, a group of Los Angeles area amateurs has donated its free time and the use of its equipment in order to augment the eyes and ears of "the law."

While exact details of how these volunteers are utilized cannot be released (as this would negate the effectiveness of the program), the amateurs basically function as "crime spotters" and report any seemingly unusual activities to the police via their amateur stations. Already a number of alleged criminals have been thwarted in their efforts, as a direct result of this program, with arrests having been made. The results have been so rewarding that officials hope to expand this initial experiment to a city-wide operation, as they feel it would be of benefit to the citizens of the community. Key to the overall success is the fact that the operation is run according to specific guidelines set forth by the police department, and total adherence to these rules is required of all volunteers.

The success of this program has again overwhelmingly proven the value of amateur radio as a public service, and such programs set up in communities throughout the country could be a reality. Information along these lines is available free of cost, by writing to "Amateur Radio Service," P.O. Box 7302, Burbank CA 91504. Amateurs in the Los Angeles area wishing to help expand this operation should also contact the P.O. Box.

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1430 - 1600	Docket 20282	Dick Everett	FCC Staff
1630 - 1730	State of the Art VHF Equipment --- panel composed of Ed Clegg of Clegg, Bob Brown of VHF Engineering and Grant Bright of ICOMM		
1930	Banquet ($ 8.00 for Rib Eye Steak) Banquet Speaker will be Phil Wicker, W4ACY		

Sunday

1000	Navy MARS Meeting
1100	CVRA General Membership Meeting
1300	Grand Prize Drawing

Flea Market on Both Days..... Bring your goodies
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CAROLINAS - VIRGINIA REPEATER ASSN.

Early in 1971, a number of repeater owners and club representatives that operated repeaters began discussing the numerous potential problem areas that were beginning to arise as a result of the rapid growth of two meter FM operations and repeaters. Recognizing the many problem areas that were beginning to emerge, and realizing the need for an organized effort to coordinate activity on the VHF bands, several repeater owners and representatives from repeater clubs met in Greensboro, NC, on March 14, 1971, to review the problems. At this meeting the decision to form an organization for VHF repeaters..... to be known as "The North Carolina FM Repeater Association".

Later, as repeater activity spread, repeater groups in Virginia and South Carolina began to express interest in joining the Association. So in November 1973, The "CAROLINAS-VIRGINIA REPEATER ASSOCIATION, INC." was created to serve the repeater interests in North Carolina, South Carolina, and Virginia.

PURPOSE

The basic purposes of the Association are to:

1. Serve as a coordinating body for VHF repeater and simplex frequencies.

2. Promote the exchange of information concerning repeater installations and operation.

3. Offer guidance and assistance in establishing repeaters.

4. Provide a unified voice for VHF FM interests.

5. Advance the general interest and welfare of amateur radio as a public service.

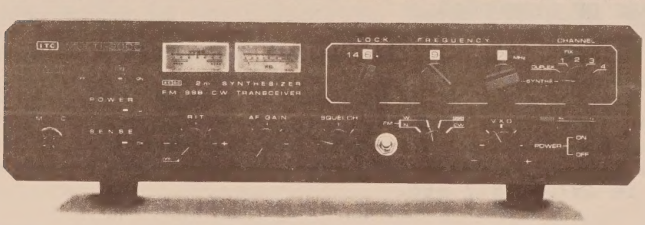
The amateur service must work within itself to provide some degree of regulation and control on the VHF bands -- the Association plans to fill this need in the Carolinas and Virginia. In the October 1972, FCC ruling regarding repeaters, the following comments were part of the record: "Restriction of repeater operation to specific portions of the amateur bands above 50 mHz has not been adopted as proposed in the (original) notice. Approximately one-half of the amateur VHF bands and 8 mHz of the 420 mHz band is being authorized for repeater usage. The Commission is persuaded by the comments and by observation that regional and national frequency planning and coordination by amateur radio operators themselves can result in the best spectrum utilization appropriate to the service. However, we are prepared to reverse this decision should plans and their implementation not occur within a reasonable period."

Let's not drop the ball on working together..... we certainly do not need any more regulations.

MEMBERSHIP

There are two classes of membership in the Association: (1) Repeater Membership (Full Membership) is available to any group or individual that operates a licensed amateur VHF repeater which provides consistent service to an area within the states of North Carolina, South Carolina, or Virginia. The repeater is represented in the Association by two licensed amateurs --- they have one vote between them. These Representatives are eligible to run for the posts of Director and Vice Director in their respective districts and for all of the officer posts such as President, Vice President, Secretary and Treasurer.
(2) Associate Membership is available to any individual interested and/or active in VHF operations. Although Associate members do not have a direct voting

MEET THE STATE OF THE ART ON 2 METERS... THE ITC MULTI-2000 CW/SSB/FM TRANSCEIVER



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privilege, except through their "Home" repeater, they may serve on special committees, and do receive quarterly newsletters, and other special bulletins.

DUES

Dues for Repeater Membership is $ 6.00 annually. This provides the two Representatives with full privileges and they do not have to pay any additional dues. Dues for Associate Membership is $ 2.00 annually.

OFFICERS AND BOARD OF DIRECTORS

The Association has been divided into nine (9) districts which conform to geographical boundaries and tend to group member repeaters into natural communications areas. The Repeater Representatives in each District elect a Director and Vice Director from their number to represent their district. The nine Directors make up the Board of Directors and the Frequency Coordinating Committee. The Director and Vice Director are elected for two year terms beginning on odd numbered years. ie 1975, 1977 etc.

The four officers - a President, Vice President, Secretary, and Treasurer - are elected from all the Repeater Representatives by the Board of Directors. Officers are elected for two year terms beginning on even numbered years. ie 1976, 1978, etc.

All elections are conducted by mail, based on slates of officers and Directors prepared by Nominating Committees in each district. Additional nominations may be made by any Repeater Representative prior to closing of the nominations.

MEETINGS

The Board of Directors meet formerly twice each year, once in the Spring and once in the Fall. These meetings are for Directors, Vice Directors, and Officers, but any Repeater Representative or Associate Member may attend.

District Directors are encouraged to have meetings of the Repeater Representatives in their Districts at least once each year. General membership sessions are usually held at Hamfests throughout the three state area to answer general questions and review current problem areas. These are informal "get-togethers" and no formal business is conducted.

COMMITTEES

The Association functions through the effective use of committees. The President appoints committees for the review and resolution of all types of VHF and repeater related problems, and to carry on operation of the Association. The primary committee in the Association is the Frequency Coordinating Committee which is composed of the nine District Directors and a Chairman appointed by the President. Other Permanent committees include the Repeater & Associate Membership Committees, the Newsletter Committee, and the FCC Liason Committee.

Any member of the Association can serve on a Committee. If you know of a particular problem area, or specific technical area of concern, a letter to the President will result in a group being created to provide a recommendation to the Board of Directors.

If you think the Association is not active, that fault is directed back at you. Only you can make the Association active.... by being willing to work with other VHFers in resolving problem areas.

THE CAROLINAS-VIRGINIA REPEATER ASSOCIATION, INC.....cont'd

GENERAL

Only through a united effort on the part of individual repeater owners, clubs, and users, will the goals and aspirations of the "Carolinas-Virginia Repeater Association" be realized. If you, or your club, plans to set up a repeater, or if you are currently operating one, please contact the Association for a membership application.

The Association has the potential for becoming the largest single organized voice for VHF in the states of North Carolina, South Carolina, and Virginia. We would certainly like to have you as a member and contribute to this voice.

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THE REPEATER CONFLICT ON 16/76

Two very good, wide area coverage repeaters continue to operate on 16/76 from Mt. Pisgah, near Asheville, and from Bays Mtn Park, near Kingsport. This situation has existed for quite some time. Both repeater operators began working with a repeater on 16/76 about the same time. K4LSP, Eddie Palmer, in Kingsport, indicates he began experimental operations from his home QTH in Feb 1971. WA4BVW, Ken Woodard, Mt Pisgah, indicates he began experimental operations from atop Mt Pisgah in Mar 1971. In the Fall of 1971, WA4BVW joined the newly organized North Carolina FM Repeater Association.... on his application Ken indicated he was in continuous operation from atop Pisgah. The Chairman of the Frequency Coordinating Committe for the NCFMRA was not aware of any conflicts on 16/76 at that time. In Feb 1974, Eddie Palmer, K4LSP joined the CVRA (the expanded Association) as WR4ADO, indicating that his repeater on 16/76 was operating from his home QTH on a telephone pole, but he had plans to move it to another site on Bay Mtn, at 2200'.

Complaints from a number of individual amateurs in the Western NC area began to filter into the CVRA as early asthe Spring of 1974. Likewise, both K4LSP and WA4BVW entered letters of complaint to the CVRA concerning each others operations and in particular concerning the "users" of the "other" repeater. The CVRA met with both Eddie and Ken at the Shelby Hamfest in Sep 74 to detremine if some type of agreement could be worked out. Nothing was accomplished.

It had become apparent from earlier repeater conflictsin the Carolinas, and all over the country for that matter, resolution of a repeater conflict must be made by the Trustees involved. Recommendations from other individuals or groups were not generally accepted. This is why, up until the 16/76 case arose, the CVRA had always worked behind the scenes with the Trustees involved to reconcile frequency conflicts -- with no publicity. However, it became apparent that the 16/76 situation was getting worse instead of better. Copies of letters being filed with the Atlanta office of the FCC began to be received by the CVRA as many as three to four per week. These ranged from outright accusations of deliberate interference to requests for assistance in the resolution of the frequency conflict. All of these were from users..... not the Trustees.

During this time, K4LSP advised the CVRA that he was withdrawing his membership since it was apparent to him that the CVRA was not going to "move the Mt Pisgah" repeater off of 16/76, and that he was advising the other "border" repeaters along the Tennessee/North Carolina line not to associate with the CVRA. Even stronger comments were included in his letters, many of which would be detrimental to him and the Editor feels that publication of them would not serve any useful purpose.

The CVRA decided not to make a recommendation on the frequency conflict unless both Trustees would agree to abide by the recommendation after it was made. The feeling here, was that the CVRA didn't want to choose up sides with anyone, but wanted to see the problem solved, not agrevated. Several months elapsed before the CVRA received letters from both Trustees asking that the CVRA arbitrate the conflict..... and that they both agreed to abide by the decision.

The CVRA appointed three amateurs, all who are Trustees of repeaters outside the coverage area of the two repeaters in question, to be the committee. None of the three members had ever met the Trustees of the two repeaters in question.

A meeting was set up on March 22, 1975, in Charlotte for a recommendation by the committee. Both parties agreed to be present, or have a representative who could speak for the repeater. The meeting was to be a closed meeting between the two Trustees and the committee only.

THE REPEATER CONFLICT ON 16/76..... cont'd

The committee intended to meet with both Trustees and try to get a solution between them without having to resort to arbitration, the still preferred way to solve a problem. However, when the meeting time arrived, Ken Woodard, WA4BVW, from Mt Pisgah was present, but Eddie Palmer, K4LSP, was not. Several supporters of the Mt Pisgah repeater were also in attendance and wanted to attend the meeting. The meeting was held as scheduled, with the Chairman of the Committee, President and Past President of the CVRA,and WA4BVW in attendance. Before the meeting began, a call was placed to the residence of K4LSP in Kingsport to determine if he was on the way to the meeting, or exactly what were his intentions. Eddie was not at home. He was asked to return the call to Charlotte upon his return, regardless of the time.

The meeting was held without K4LSP in attendance. The committee recommended that the Kingsport repeater move to another frequency. Among the reasons given by the committe for its choice included:

a. The Mt. Pisgah repeater appears to serve a considerably larger group of amateurs, and has demonstrated continuous operation for over three (3) years at the present location with the present coverage area.

b. There appears to be more alternate frequencies available to Kingsport than Mt. Pisgah..... both technically and due to location.

c. The original CVRA Full Member Application dated 2/18/74 from K4LSP indicated that the WR4ADO repeater antenna was at his home QTH in Kingsport. This cannot be considered to be the same repeater when moved out of town to a 2200' mountain peak. Drastic repeater changes of this type do not entitle repeater operators to "grandfather" rights, especially if such moves lead to interference.

d. It appears that the Kingsport repeater was moved to a higher elevation in spite of the fact that, K4LSP, through his traveling, knew that such a move would cause interference with an existing repeater.

The committee immediately sent a telegram to K4LSP reporting the results of the meeting, and followed it up with a registered letter. Copies of the results of the meeting, and the letters from both Trustees agreeing to abide by the recommendation of the committee, were sent to every individual from whom the CVRA had received correspondence relating to the 16/76 matter. Likewise copies were furnished to the FCC Offices which had received complaint letters relating to the problem.

The CVRA feels like it acted in a professional manner in this case, and gave both sides a fair "shake". Apparently that isn't the case everywhere however, as there still remains a problem.

Shortly after the results of the meeting were out, the CVRA received a letter from K4LSP advising that he had turned the WR4ADO repeater over to the Bays Mountain Repeater Association, and that as Frequency Coordination Chairman for Tennessee he was recommending that the Kingsport repeater remain on 16/76. He also said that he was distressed that the arbitration committee of the CVRA had made such a recommendation without both parties in attendance.

So the interference problem still exists, and fewer and fewer amateurs are using these two fine repeaters due to the conflict. There is still a lot of behind the scenes activity going on, attempting to arrive at a solution. But, as the CVRA had believed from the beginning, the solution has got to be made up between the two Trustees.

(NORFOLK, VA) ---- Plans for the proposed 69/09 repeater for this area have been cancelled indefinitely.

(HAMPTON, VA) --- WR4ALH, 13/73, (formerly WR4AKE) has been delayed from getting on the air due to an incomplete duplexer. Current plans call for the repeater to be in full service by June.

(CHESAPEAKE/NORFOLK, VA) ---- WR4ACN, 19/79, is still running on the old Motorola decks. The new GE MASTR 80 watt repeater is in final testing at W4THN's QTH. Current plans call for the "all new" WR4ACN to be on the air in late May or early June.

(HAMPTON, VA) ---- WR4AFT, 34/94, is now on tone (whistle up) access. The access tone is 1477 Hz which can be obtained from any button on the right column of a standard Touchtone Pad. Tone access is being used to eliminate spurious key ups from "DX" signals. The repeater remains an open machine.

(NORFOLK, VA) --- WR4ACN, 19/79, is an ARRL Official Bulletin Station. ARRL Bulletins are read at 2100 on Tue, Wed & Thur of each week.

(PORTSMOUTH, VA) --- The proposed 25/85 repeater being sponsored by Tom Lusson, WA4ILH, has been completed but lacks a satisfactory site. Once a site is secured license application will be made. Hopefully this machine will be operational by August 1975.

(NORFOLK, VA) --- The Hampton Roads Radio Assn, sponsors of WR4ACN (19/79) will sponsor the Second Annual Tidewater Swapfest on Saturday, July 12 (rain date will be July 19) from 1000 - 1600. It will be a "bring your own table and goodies" affair with a picnic atmosphere. Location to be announced, further details from WA4MMP. Talk in on 19/79, 34/94, and 52 simplex.

(NORFOLK, VA) --- A note from WA4MMP, Bill Shaw, CVRA Director Bay District----- Part 97.3 of the Regs defines a repeater station as a "station licensed to automatically retransmit the radio signals of other amateur radio stations for the purpose of extending their intra-community radiocommunication range". Note that it says "intra" and not "inter" community. The spirit and intent of this definition is not to DX repeaters,as DXing a repeater detracts from its normal purpose of extending coverage for local repeater users. So confine your DXing to simplex frequencies (52, 49, etc on 2 mtrs) and use "DX" repeaters only to establish contact, then move to simplex.

(DURHAM, NC) .... Don't forget to attend the CVRA meeting at the Durham FM Convention at 1100, Sunday, May 18, 1975. See you there.

THE REPEATER CONFLICT ON 16/76 .....cont'd from page 13

The amateur prides himself in the areas of "self Policing" and cooperation. Yet for some reason a lot of us feel that the other fellow must cooperate, not necessarily us too.

The 76 situation will be solved when one, or both, of the Trustees decides he wants to solve the problem. There are a number of amateurs in the Asheville and Kingsport areas that are really trying to help develope a solution to the problem. They need everyone's help in the area. We wish them all the luck in the world.

(ASHEVILLE, NC) ---- The effort to place a repeater on 31/91 is now a dead issue since the individual who was working on the machine has moved from the area.

(HENDERSONVILLE, NC) --- WR4ALC, now operating from atop Bearwallow Mtn at 4700' in Henderson County. The machine will soon be operated in tandem with WR4ALD on Wayal Bald in Marion County. The FCC has approved all the necessary licensing arrangements. This combination should provide mobile coverage from the Charlotte area into Tennessee. Mobiles from Charlotte are currently accessing the 04/64 machine on a consistent basis.

(BEULAVILLE, NC) ---- WR4ADS, 34/94, should be back on the air very soon. Don Brown, WA4UMH, is the owner & operator and has been a member of the CVRA for the past 2 years.

(MANTEO, NC) --- WR4AKB, 34/94, now operating with a new Standard ARPT-1 solid state 10 watt machine. A Heathkit 40 watt amplifier is on order and should be installed by the summer. All visitors to the Outer Banks of North Carolina are welcome to use the repeater. The repeater is located at Radio Station WOBR, 1530 kc & 95.3 mHz incidently, where it is under the watchful eye of W4PCN.

(DURHAM, NC) --- WR4AGC, 222.34/223.94, now providing consistent mobile coverage within a 25 mile radius. Planned improvements in the receiver plus increases in transmitter power should provide solid coverage along a 40-50 mile strip of I-85 in the near future. The repeater is completely solid state.

(WALTERBORO, SC) ---- Group her active in getting a repeater on the air. WB4PVL is a member of the group which indicates 37/97 would be their choice of a channel. However, due to the proximity of existing repeaters on that channel in Florence and Anderson, other frequencies are being recommended by CVRA.

(WILMINGTON, NC) --- Wilmington VHF Assn. Inc., sponsor of WR4AHL, 22/82, officers for 1975 are: Pres- WA4KBP, Duncan McFadyen; VP- WA4GDS, Frank Haines; Sec/Treas- WA4YBI, Henry Montgomery; Rptr Mgr- K4GMP, Jerry Tate; Ass't Rptr Mgr- K4JQJ, Herman Brock; Board Members- WB4TVD, Ralph Foy & WA4LED, Ed Rusher.

(FAYETTEVILLE, NC) --- Three members of the Cape Fear ARS of Fayetteville, WA5TVQ, W5QCO & W4LPL, recently gave an amateur radio demonstration at a local school. Radio Shack provided free books on basic electronics and free battery cards to all in attendance.

(GREENSBORO, NC) --- There will be a special meeting for persons interested in repeaters and VHF FM featuring Lou McCoy, W1ICP, of ARRL as the featured speaker in Greensboro on May 20. The time and place will be announced over all the state and local nets as the time approaches. Lou has served as Staff Liason for the VHF Repeater Advisory Committee for the past several years and is very knowledgeable on the subject.

(GREENSBORO, NC) --- The 16/76 repeater in Greensboro, formerly WR4ABL, is temporarily off the air pending the receipt of a new license. It should be back on the air in the next few weeks.

(ANDREWS, NC) --- That's out in the far western tip of North Carolina between Franklin and Murphy -- group here considering a 4700' peak for a good wide area machine. Unfortunately there is not a group in the Georgia area that is coordinating frequencies, so an unqualified channel cannot be specified by the CVRA. Maybe some more news will be available shortly.

ANDERSON, SC — WR4AIO

146.37/146.97 — 30 watts

Doug Welborn, K4LNU, is working on this repeater which will serve the Anderson area from its planned site at WAIM-TV. The machine itself will be in the transmitter building of WAIM and the two Stationmaster antennas will be spaced 200' apart on the WAIM tower. The Xmtr antenna will be at 1150' MSL. Equipment will consist of converted Motorola Sensicon units. This will be an open, carrier accessed repeater. ID will be via CW. Reps to the CVRA are K4LNU & WA4ZPM.

COLUMBIA, SC — WR4ACD

146.34/146.94 — 35 watts — 24 hours daily

The Carolina Repeater Society operates this Standard repeater from its site 17 miles SW of Columbia at the intersection of HWY 215 & 6. The machine feeds through a Sinclair Duplexer into a J-Pole at 550' HAAT & 720' MSL. Mobile coverage is provided to the counties of Richland, Lexington, and 70% of Kershaw. Base stations from Sumter, Camden, Lexington, and Kershaw easily access this machine. This is an open repeater and may be accessed with a 1800 Hz tone burst. ID is via CW. The autopatch may be accessed by the * and shut down with the #. Non club members are asked to request the use of the patch from the Control Operator before accessing. Trustee is Paul Marsha, K4AVU. Reps to the CVRA are K4AVU and K4DSK.

COLUMBIA, SC — WR4ABA

146.28/146.88 — 30 watts ERP — 0600 - 2400 daily

Gene Blevins, K4UJQ, and J. C. Branham, WA4MPC, own and operate this repeater which provides mobile coverage to Richland, Lexington, Fairfield, Newberry, Kershaw, Sumter and Calhoun Counties. Base stations from Sumter, Orangeburg, Chester, Lancaster, Camden, and Rock Hill frequent this machine. The Standard SCRPT feeds a Hy-Gain J-Pole at 400' HAAT and 604' MSL. This is an open repeater and is carrier accessed. ID is via CW. Trustee is K4UJQ. Reps to the CVRA are K4UJQ and WA4MPC.

FLORENCE, SC — WR4AGM

146.37/146.97 — 10 watts — 0700-2230 daily

The Pee Dee FM Repeater Association operates this repeater from atop a 13 story building in downtown Florence. The receiver is a WABCO 20R-S1 and the transmitter is a COMCO Model 935 exciter feeding through a homebrew 6 cavity duplexer to a Stationmaster antenna at 200' HAAT & 238' MSL. This is an open repeater and is carrier accessed. ID is via CW. Mobile coverage is provided to the counties of Florence, and sections of Darlington, Marion, Lee, and Sumter. Base stations from Sumter, Marion, Chesterfield, and Bishopville easily access this machine. Trustee is W. D. Weeks, WA4ISM. Reps to the CVRA are WA4ISM & W4PFZ.

GREENVILLE/GREER, SC — WR4ABG

146.34/146.94 — 25 watts — 24 Hours daily

The Amateur Radio Club of Greer sponsors this repeater which operates from its site atop Paris Mountain north of Greenville, with antennas mounted on the tower of Channel 29 UHF TV station. The converted Motorola Sensicon units feed a homebrew antenna system which is 1101' HAAT & 2111' MSL. Good mobile coverage is provided to the counties of Greenville, Laurens, Pickens, Oconee, Anderson, and Spartenburg. Base stations from Anderson, Greenwood, Clemson, Laurens, Clinton, Hendersonville, Spartenburg, and Toccoa easily access this machine. This is an open repeater and may be accessed with a 2400 Hz tone burst. Trustee is Jim Murray, W4ULY. Reps to the CVRA are W4ULY & WA4MWC.

NORTH AUGUSTA, SC — WR4ABB

146.13/146.73 — 25 watts — 24 hours daily

This repeater operated by the North Augusta-Belvidere Radio Club, provides mobile coverage to Aiken and Edgefield Counties in SC and Richmond, Columbia, and Burke in Ga. Base stations from Augusta, Thompson, Edgefield, McCormick, and New Ellington easily access this repeater. The GE Progress Line feeds through a set of Homebrew cavities to a Ringo Ranger at 270' HAAT and 592' MSL. The machine is housed in two metal cabinets at the base of the Municipal Water Tank. This is a carrier accessed, open repeater. Trustee is A. W. Schoenfelder. Reps to the CVRA are K4FR and W4PED.

PICKENS, SC — WR4ADP

146.40/147.00 — 24 hours daily

A non club group consisting of five amateurs installed this repeater atop Glassy Mountain, 2 miles east of Pickens. Good mobile coverage is provided to the counties of Pickens, Oconee, Greenville, and Anderson. Base stations from Greenville, Anderson, Walhalla, Easley, Spartenburg, Seneca and Clemson easily access this repeater. The machine consists of Motorola equipment feeding a Ringo AR-2 at 680' HAAT and 1735' MSL. This is an open repeater and is carrier accessed. ID is via CW. Trustee is WB4YXZ, Larry Turner. Reps to the CVRA are K4BLF & WB4YXY.

ROCK HILL, SC — WR4AJO

146.43/147.03 — 30 watts — Not yet on

The Rock Hill ARC plans to operate this repeater from a water tower site on Laurel St @ West Main St in Rock Hill. Mobile coverage is expected to include the SC counties of York, Chester, Cherokee, Spartenburg, Union, Lancaster and Fairfield, and the NC counties of Mecklenburg and Union. Equipment is Motorola and will feed through a Phelps-Dodge duplexer to a single 6 dB antenna at 160' HAAT & 880' MSL. This will be an open, carrier accessed repeater. ID will be via CW. Trustee is Carlton Kimsey, K4YFK. Reps to the CVRA are K4FFW and WB4RBO.

ASHEVILLE, NC (Mt. Pisgah) — WR4AKR

146.16/146.76	90 watts ERP	24 hours daily
222.34/223.94	60 watts ERP	24 hours daily

This machine provides consistent mobile coverage throughout Western NC, Northern SC, Northeast GA, & East TN. Base stations between Asheville and these points easily access this repeater: Charlotte, Lancaster, Greenwood, Athens, Knoxville, and Kingsport. The repeater is located at the WLOS-TV transmitting site on Mt. Pisgah, 14 miles SW of Asheville. The transmitting antenna is 6000' MSL & 2430'HAAT. Transmitter is a Motorola 80D and receiver is a Motorola Sensicon A unit. The antennas consist of two 5/8 mobile antennas spaced 100' apart. This is an open repeater and is VOX operated with a 3 second delay. ID is via CW. Repeater Trustee is Jim Carrier, WA4MKI. Reps to the CVRA are WA4MKI & WA4BVW. The machine is owned by Ken Woodard, WA4BVW

ASHEVILLE, NC — WR4AGF

146.22/146.82	160 watts ERP	24 hours daily

WR4AGF is owned by Ralph Roberts, WA4NUO, & is located at his QTH in Alexander, NC. A GE MASTR PROG is feeding a HyGain 6dB colinear at 2250' MSL and (-)400' HAAT. Consistent mobile coverage is provided in the NC counties of Buncombe, Madison, Henderson, and Haywood with base stations in Asheville, Alexander, Hendersonville, Arden and Weaverville easily accessing the machine. The repeater is open and is carrier activated. ID is via CW. An autopatch is being planned. Trustee is WA4NUO who also represents the repeater in the CVRA.

AURORA, NC — WR4ABQ

146.34/146.94	100 watts ERP	Unscheduled hours of Operation

Dennis Dough, W4EYZ, owns and operates WR4ABQ from his home QTH in Aurora, 40 mi SE of Greenville, NC near Pamlico Sound. The machine consists completely of Motorola equipment feeding separate Xmtr & Rcvr antennas at 70' & 90' respectively. The transmitting antenna is 99' MSL & 90'HAAT. Repeater ID is via voice. The repeater is open and is carrier accessed. Mobile coverage is provided in the counties of Beaufort & Pamlico with base stations within a 40 miles radius easily accessing the machine. W4EYZ is the Trustee and Rep to the CVRA.

BEULAVILLE, NC — WR4ADS

146.34/146.94	60 watts	24 hours daily

WR4ADS is owned and operated by Don Brown, WA4UMH. The antenna is a single 5.8 dB gain antenna at 100'. Mobile coverage is provided within the counties of Duplin, Pender, Lenoir, Onslow, and Wayne. Base stations in Jacksonville, Kinston, Goldsboro, and Wilmington readily utilize this carrier accessed, open repeater. CVRA Reps are WA4UMH and WA4ZYK. Beulaville is located 26 miles NW of Jacksonville, NC.

BURLINGTON, NC — WR4AIF

146.07/146.67 — 60 watts — 0630 - 2330 daily

The Alamance Repeater Association sponsors WR4AIF which provides mobile coverage to Alamance County. Base stations in Greensboro, High Point, Durham, Reidsville, and Danville easily access the machine. A GE PROGRESS Line repeater feeds a single antenna at 110', 750' MSL & 160' HAAT. Repeater ID is via CW. An autopatch is under construction. The repeater is open and is carrier accessed. CVRA Reps are W4VGZ and WB4ZIN. Trustee is W4VGZ.

CHARLOTTE, NC — WR4ALO

146.46/147.06 — 60 watts — 24 hours daily

This recently installed machine sponsored by the Charlotte Radio Club provides consistent mobile coverage to the NC counties of Mecklenburg, Union, Gaston, Lincoln, Cabarrus, and the SC counties of York & Lancaster. Base stations within a 60 mile radius of Charlotte easily access the machine. The repeater is located at the WSOC-TV transmitting site with its two antennas separated 40' on the TV tower. Antenna height is 1400' MSL and 600' HAAT. ID is via CW. Several modifications are pending on the equipment which should improve the coverage in the near future. The repeater is open and is carrier accessed. Repeater Trustee is Francis Nakamura, WB4ETF. Reps to the CVRA are WB4ETF and WB4ZTI.

CHARLOTTE, NC — WR4AEU

146.34/146.94 — 0630 - 2330 daily

The Mecklenburg Amateur Radio Society sponsors this machine which provides mobile coverage to Mecklenburg, Union, Cabarrus, Gaston, & Lincoln counties in NC and York & Lancaster in SC. Base stations within a 60 mile radius of Charlotte routinely access the repeater. The repeater site is the roof of the old North Carolina National Bank Building in downtown Charlotte and it provides an elevation of 1180' MSL & 270' HAAT. A single Phelps-Dodge Super Stationmaster antenna is used. The Dycomm repeater is equipped with an autopatch. Access the autopatch with the #, and also disconnect with the #. Persons routinely using the autopatch are asked to donate to its upkeep. Repeater Trustee is WB4NDB. Reps to the CVRA are WB4NDB and WB4KOH.

CHARLOTTE, NC — WR4ABT

146.22/146.82 — 30 watts — Unscheduled hours of Opn

Joe Bryant, W4YYF, is the owner and operator of WR4ABT. The GE PROG Line machine is located at his home QTH. The repeater antenna is a Stationmaster at 789' MSL and 75' HAAT. The repeater is open and is carrier accessed. Good mobile coverage is offerred to Mecklenburg County with base stations in Monroe, Gastonia and Rock Hill easily accessing the repeater. Reps to the CVRA are W4YYF and WA4LIF.

DURHAM, NC — WR4AGC

146.22/146.82	50 watts	24 hours daily
222.34/223.94	10 watts	0800 - 2200 daily
449.10/444.10	20 watts	0800 - 2200 daily

The Durham FM Association is currently providing repeater coverage for the Eastern part of North Carolina on three bands. The 146 and 449 repeaters are owned by the Association while the 220 repeater is owned by Herman Cone, WB4DBB.

The two meter repeater is a GE MASTR feeding 50 watts through a Phelps-Dodge 6 cavity duplexer to a Stationmaster antenna at 160', 970' MSL & 363' HAAT. Repeater ID is via CW and Voice. An autopatch is available for the cities of Raleigh, Durham & Chapel Hill. * brings it up, # shuts it down. Mobile coverage is provided in the counties of Orange, Durham, Alamance, Wake, Guilford, Chatham, Rockingham, Harnett, Person, Caswell, Granville, Johnson, Franklin, Lee, and Randolph. The repeater site is located approx. 10 miles west of Durham just off I-85 at Hillsborough. Repeater Trustee is Charles Durst, WA4WTX. Reps to the CVRA are WA4WTX and W4EYN.

The 220 repeater is completely homebrew and 100% solid state. Power output is 10 watts feeding two Ringo Rangers separated 30' on the tower. Height above MSL is 905' and 320' HAAT. Work is in progress on a 40 watt amplifier for the transmitter. Preliminary results show consistent mobile coverage in Orange, Durham and Alamance counties. The repeater is open and is carrier accessed. ID is via CW. The machine is located at the same site as the 2 meter repeater above. WB4DBB is the owner and is the Rep in the CVRA.

The 449 mHz repeater is Touchtone accessed and is an integral part of the 22/82 2 meter repeater. The transmitter and receiver strips are Motorola T-44 strips feeding through a Phelps-Dodge Duplexer to a J-Pole antenna. Power output is 20 watts. This repeater is in a temporary location in Durham with somewhat limited coverage. It should be in a better location in the near future. ID is via CW.

DURHAM, NC — WR4AJV

147.75/147.15	20 watts	Unscheduled hours of Operation

WR4AJV is owned and operated by T. M. Rumple, WA4TWH, from his home QTH in Durham. The repeater consists of Motorola strips feeding a Ringo Ranger antenna at 367' MSL, (-) 1' HAAT. Mobile coverage is provided to the greater Durham area. The repeater is open and is carrier accessed. Repeater Trustee isWA4TWH. Rep to the CVRA is WB4OOK.

OTHER NEWS:

If you are interested in setting up a six meter repeater, or if you are already working on one, contact WB4DBB, Herman Cone, in Durham. The CVRA is interested in working with six meter enthusists toward helping provide a state wide system on six. There are a lot of possibilities, so contact Herman.

ELIZABETH CITY, NC		WR4ADN
146.46/147.06	50-80 watts	24 hours daily

WR4ADN is sponsored by the Pasquotank Amateur Radio Club and provides good mobile coverage to Pasquotank, Camden, Currituck, Perquimans and Chowan Counties in North Carolina. Base stations from Norfolk, Plymouth and Manteo frequently use this machine. The repeater is a GE MASTR transmitting on a GAM TG-4 and receiving on a 9dB Homebrew antenna. The two antennas are separated 50' on the tower. The Xmtr antenna is 200' MSL and 200' HAAT. The repeater site is at WA4JZX's shack two miles east of Elizabeth City. This is an open repeater and is carrier accessed. ID is via CW. The autopatch may be accessed by Touchtone "*29" and disconnected by "#". Dial "*23" for 162.55 Weather, "#" to disconnect. The trustee requests that the autopatch be used only when you are within the Albemarle Metro Telephone area. The Trustee is Al Onley, K4VHV. Representatives to the CVRA are K4VHV and WA4JZX.

FAYETTEVILLE, NC		WR4ADK
146.31/146.91	22 watts	24 hours daily

The Cape Fear Amateur Radio Club sponsors this repeater from its new site at The Methodist College, six miles north of Fayetteville on US 401. This is an open repeater and is carrier accessed. Recent reports indicate that mobile coverage is solid to a radius of 30 miles which would include Cumberland, Hoke, Harnett, and parts of Sampson, Robeson, and Scotland Counties. Antenna height is 100' above ground, which gives an approx HAAT of 100', & MSL of 300'. ID is via CW. Repeater Trustee is W4EHF, Bill Finch. Reps to the CVRA are W4EHF and W4VTP.

FOREST CITY, NC (Cherry Mtn)		WR4AHA
146.07/146.67	40 watts	24 hours daily

WR4AHA repeater site is at the transmitter building of WAGI on Cherry Mtn just across the North Carolina line north of Gaffney, SC., & east of Forest City. WA4BKU, W4TMT & WA4AJV own and operate the machine. Trustee is WA4AJV. Consistent mobile coverage extends approx 40 miles from Forest City. A GE PROG Line repeater feeds a Stationmaster at 500' HAAT & 1700' MSL. ID is via CW. This is an open repeater and is carrier accessed. Reps to the CVRA are W4TMT & WA4BKU.

ASHEVILLE/HENDERSONVILLE, NC		WR4ALC
146.04/146.64	100 watts ERP	24 hours daily

This wide area coverage repeater provides good mobile coverage to most of Western NC, East Tenn, Northwest SC and Northeast Ga. Base stations from Charlotte, Columbia, Greenville, Gainesville, Knoxville, and Hickory easily access this machine. A Motorola Sensicon repeater feeding a single J-Pole antena from atop Bearwallow Mountain, 10 miles SE of Asheville, at 4300' MSL and over 2000' HAAT provides this extremely good coverage. This is an open repeater and is carrier accessed. Owner, operator and Trustee is WB4YAO, Dan Kimball. Repeater ID is voice. The machine will be equipped with an autopatch in the future. FCC approval has been obtained to operate this repeater in tandem with WR4ALD which will be located near Franklin, NC and operate on 146.84/146.24. This combination will provide mobile coverage from the Charlotte area into Tennessee. Also under construction is a 6 meter repeater to be operated from the Asheville site on 52.01/53.99. Reps to the CVRA are WB4YAO and WA4NUO.

YOUR HOME REPEATER

Everyone has a "HOME"..... and yes that's true for VHF FM operators too. Most VHF FM operators purchased, built, or modified equipment for their use primarily because of the availability and advantages of repeaters. Certainly, all of use simplex frequently, but most of the time we monitor or congrgate on a repeater channel.

And does the repeater draw a crowd? Yes sir .... the word soon gets around about how good the local repeater is. You can operate 10 watts from your mobile while going to and from work, and talk 80 to 100 miles away with no problem. And if one repeater is occupied, you can switch channels to another one.... real nice isn't it?

But what happens in the morning when you start to work, and you key the input to the local repeater, and nothing happens? Well, first you try again.... and no squelch tail. Then you turn the squelch control on your transceiver to see if you can hear any noise... right? Key the mike again... still no repeater. Then you quickly switch channels to see if you can hear or hit another repeater.... fearing all along that something may be wrong with your rig. Yes, most of us think something is on the blink in our rig when the local repeater doesn't emit its melodeous CW call when we key down on the input frequency. Admit it or not, we use the repeaters as standards, and we expect them to be there.

And most of us have one particular repeater that we monitor above all the rest... yes that repeater is our "HOME" repeater. It may not be in the same town as we, and we may not be a member of the club that operates it, but we still consider it "HOME". Yes, we tell our friends, "When you pass through Podunk, give me a call, I always monitor 76, the local repeater".

Now what is my obligation as a user of this "HOME" repeater? Well first and Foremost, be sure to stay on your best manners when using the repeater.... after all, some fellow Amateur has placed himself in the vulnerable position as Trustee of the repeater license... so at least honor that point. Next, lend financial support to the repeater owner, whether it be a club or individual, makes no difference. Make a financial donation periodically.... whatever you think is fair. Don't tell the owner, "Well just call on me next time you need some money, you know me, I'll be glad to give." Chances are, you will never be asked directly to donate to a repeater. Most Amateurs just don't want to ask... and the ones that do, are condemed openly for it.

A repeater owner, club, or individual, must have funds available for: (1) the initial costs for equipment and installation, (2) the maintenance and operating costs, and (3) improvements and modifications.

Initial equipment costs and installation may run as low as $ 400, but most machines run much more. The cost of the receiver/COR/transmitter is not necessarily the primary cost.... but other items such as timers, remote control equipment, tower, antennas, licensing fees, feed lines, cavities, duplexer, site preparation and building costs push the initial investment up in a hurry. Usually all of these initial costs are absorbed by a very small number of individuals, as you don't stand a chance of getting any support at all until a machine is operable.

Most owners start feeling the financial pinch after the machine is on the air.... the monthly telephone bill, cost of electricity, repairs to the equipment, and minor modifications begin to build up. Very few amateurs have experienced the costs and problems of maintaining equipment under a continuous duty cycle.. and the experience can be traumatic.

And of course there are always improvements that need to be made in the machine--standby power, spare receiver and transmitter, better antennas, autopatch, and various remote control convienience circuits. Not to mention the trips to the repeater site at all hours of the day and night to make adjustments and repairs.

But where do the owners get the funds to support such investments? Well, most of it comes from a small number of Amateurs who contribute "more than their fair share". This is where you come in..... how about selecting one of the repeaters, the one you really call "HOME" and give it your support. After all, if you use it, then why shouldn't you help maintain it?

The "HOME" repeater concept was developed at one of the very first meetings of the Association. It was by unanamous agreement that this concept would be the way we would try to operate. So go ahead, drive all over the Carolinas and Virginia and use all of the repeaters. You will never find a finer bunch of people to talk with. But then go "HOME" and do your part to maintain this fine cooperative set up..... support your "HOME" repeater.

The "HOME" repeater concept is supported by all member repeaters of the CVRA, it doesn't make a difference who you support, just do your share.

"See you on the local repeater."

SOUTHERN REPEATER SPECIALS

CLOCKS - 6 Digit LED display (MAN-7) Digital Clocks

FEATURES: 10 minute snooze alarm
24 hour alarm
AM/PM indicator
glare free red filtered panel
fast easy assembly

NOT AVAILABLE ELSEWHERE AT THIS FANTASTIC PRICE !

$ 29.95 Kit, complete kit less cabinet
$ 37.95 Assembled with wood cabinet

Allow $ 2.00 postage and handling

ALSO AVAILABLE:

- 10 watt 2 meter amplifier kit
  1-3 watts in, 10 watts out
- 2 watt audio amplifier kit
- SCA adapter kit
- Full line of ¼ watt resistors @ 6¢ each
  Prime quality factory firsts components exclusively
  Fast 24 hour order processing
  Special prices good until June 15, 1975
  WRITE FOR FREE FLYER OF KITS AND COMPONENTS

TEKPRO DESIGN SYSTEMS
P. O. BOX 6324
VIRGINIA BEACH, VA. 23456

146 MHZ BAND

GENERAL

146.00 - 146.46 Repeater Inputs
146.49 - 146.58 Simplex
146.61 - 147.06 Repeater Outputs
147.09 - 147.39 Repeater Outputs
147.42 - 147.66 Simplex
147.69 - 147.99 Repeater Inputs

All channel spacing is 30 kHz

REPEATER CHANNELS (27)

Input	Output	Input	Output
146.01	146.61	147.69	147.09
146.04	146.64	147.72	147.12
146.07	146.67	147.75	147.15
146.10	146.70	147.78	147.18
146.13	146.73	147.81	147.21
146.16	146.76	147.84	147.24
146.19	146.79	147.87	147.27
146.22	146.82	147.90	147.30
146.25	146.85	147.93	147.33
146.28	146.88	147.96	147.36
146.31	146.91	147.99	147.39
146.34	146.94		
146.37	146.97		
146.40	147.00		
146.43	147.03		
146.46	147.06		

SIMPLEX CHANNELS (13)

146.49 DX	147.42	147.57
146.52 NCF	147.45	147.60
146.55	147.48	147.63
146.58	147.51	147.66
	147.54	

SIMPLEX CHANNELS IN 145 MHZ REGION

Here are 28 channels available for simplex activity which just about all rigs will cover. Avoid operating between 145.85 - 145.975 as this portion is being used for satellite Communications.

145.02	145.23	145.44	145.65
145.05	145.26	145.47	145.68
145.08	145.29	145.50	145.71
145.11	145.32	145.53	145.74
145.14	145.35	145.56	145.77
145.17	145.38	145.59	145.80
145.20	145.41	145.62	145.83

220 MHZ BAND

GENERAL

220.30 - 222.00 Control Links
222.30 - 223.38 Repeater Inputs
223.42 - 223.88 Simplex
223.90 - 224.98 Repeater Outputs

All channel spacing is 20 kHz, with adjacent channels not to be assigned in same coverage area-- 75 mile spacing on adjacent channels typical.

REPEATER CHANNELS (55)

Input	Output	Input	Output
222.30	223.90	222.86	224.46
222.32	223.92	222.88	224.48
222.34	223.94	222.90	224.50
222.36	223.96	222.92	224.52
222.38	223.98	222.94	224.54
222.40	224.00	222.96	224.56
222.42	224.02	222.98	224.58
222.44	224.04	223.00	224.60
222.46	224.06	223.02	224.62
222.48	224.08	223.04	224.64
222.50	224.10	223.06	224.66
222.52	224.12	223.08	224.68
222.54	224.14	223.10	224.70
222.56	224.16	223.12	224.72
222.58	224.18	223.14	224.74
222.60	224.20	223.16	224.76
222.62	224.22	223.18	224.78
222.64	224.24	223.20	224.80
222.66	224.26	223.22	224.82
222.68	224.28	223.24	224.84
222.70	224.30	223.26	224.86
222.72	224.32	223.28	224.88
222.74	224.34	223.30	224.90
222.76	224.36	223.32	224.92
222.78	224.38	223.34	224.94
222.80	224.40	223.36	224.96
222.82	224.42	223.38	224.98
222.84	224.44		

SIMPLEX 24 Channels

223.40
223.42
223.44
223.46
223.48
223.50NCF
223.52
223.54
223.56
223.58
223.60
223.62
223.64
223.66
223.68
223.70
223.72
223.74
223.76
223.78
223.80
223.82
223.84
223.86
223.88

450 BAND PLAN

General:

420.05 - 430.95	Auxiliary Links, Control
431.00 - 435.00	Unscheduled
435.00 - 438.00	Reserved for Satellite Communications
438.20 - 440.00	ATV LSB
	Video Carrier(A-F: 444.50)
440.00 - 441.80	ATV USB
442.00 - 444.95	Repeater Outputs
445.00 - 446.95	Simplex, Auxiliary Links
447.00 - 449.95	Repeater Inputs

Channel Spacing is 50 KHZ.

REPEATER CHANNELS (59 Channels)

Output	Input	Output	Input	Output	Input
442.00	447.00	443.00	448.00	444.00	449.00
442.05	447.05	443.05	448.05	444.05	449.05
442.10	447.10	443.10	448.10	444.10	449.10
442.15	447.15	443.15	448.15	444.15	449.15
442.20	447.20	443.20	448.20	444.20	449.20
442.25	447.25	443.25	448.25	444.25	449.25
442.30	447.30	443.30	448.30	444.30	449.30
442.35	447.35	443.35	448.35	444.35	449.35
442.40	447.40	443.40	448.40	444.40	449.40
442.45	447.45	443.45	448.45	444.45	449.45
443.50	447.50	443.50	448.50		
443.55	447.55	443.55	448.55	444.55	449.55
443.60	447.60	443.60	448.60	444.60	449.60
443.65	447.65	443.65	448.65	444.65	449.65
443.70	447.70	443.70	448.70	444.70	449.70
443.75	447.75	443.75	448.75	444.75	449.75
443.80	447.80	443.80	448.80	444.80	449.80
443.85	447.85	443.85	448.85	444.85	449.85
443.90	447.90	443.90	448.90	444.90	449.90
443.95	447.95	443.95	448.95	444.95	449.95

449.50/444.50 not a repeater pair since 444.50 is reserved for ATV (4.5 MHZ Intercarrier) Audio.

446.00 Nat. Cal. Freq. 449.50 "DX" Freq.

50 mHz BAND PLAN

GENERAL

Selected frequencies above 53 MHZ over the years have become standard channels for uses other than repeaters. Among them are frequencies for radio control and the Military. We propose honoring those channels, and thereby earmark repeater channels adjacent to these frequencies as "RESERVED" requesting that they not be used for repeaters.

Channel spacing is 20 KHZ.

REPEATER CHANNELS (33 Channels)

Input	Output	Input	Output	SIMPLEX
52.01	53.01	52.63	53.63	51.51
52.03	53.03	52.65	53.65	etc
52.05	53.05	52.67	53.67	to
52.07	53.07	52.73	53.73	51.99
52.13	53.13	52.75	53.75	
52.15	53.15	52.77	53.77	52.29
52.17	53.17	52.83	53.83	52.31
52.23	53.23	52.85	53.85	52.49
52.25	53.25	52.87	53.87	52.51
52.27	53.27	52.93	53.93	52.525
52.33	53.33	52.95	53.95	
52.35	53.35	52.97	53.97	
52.37	53.37	52.99	53.99	
52.39	53.39			
52.41	53.41			
52.43	53.43			
52.45	53.45			
52.47	53.47			
52.55	53.55			
52.57	53.57			

Radio Control

53.1
53.2
53.4
53.5
53.6
53.7
53.8

RESERVED CHANNELS

52.09	53.21
52.11	53.29
52.19	53.31
52.21	53.49
52.59	53.51
52.61	53.59
52.69	53.61
52.71	53.69
53.09	53.71
53.11	53.79
53.19	53.81

Military

53.3

Nat. Call. Freq.

52.525

North Carolina

Asheville	WR4ALC	146.04	146.64	C
Asheville	WR4AKR	146.16	146.76	C
Asheville	WR4AGF	146.22	146.82	C
Aurora	WR4ABQ	146.34	146.94	C
Beulaville	WR4ADS	146.34	146.94	C
Burlington	WR4AIF	146.07	146.67	C
Burlington	WR4AKY	147.78	147.18	P
Charlotte	WR4AEU	146.34	146.94	CA
Charlotte	WR4ALO	146.46	147.06	C
Charlotte	WR4ABT	146.22	146.82	C
Charlotte	WR4ABK	147.78	147.18	U
Durham	WR4AGC	146.22	146.82	CA
Durham	WR4AJY	146.34	146.94	A
Durham	WR4AJV	147.75	147.15	C
Elizabeth City	WR4ADN	146.46	147.06	CA
Fairview	WR4AJX	147.24	147.90	
Fayetteville	WR4ADK	146.31	146.91	C
Forest City	WR4AHA	146.07	146.67	C
Franklin	WR4ALD	147.84	147.24	C U
Greensboro	WR4	146.16	146.76	C O
Greensboro *	WR4ABL	147.72	147.12	
Greenville	WR4AMB	147.69	147.09	C
Grifton	WR4ABP	146.16	146.76	C
High Point	WR4ADT	146.40	147.00	
High Point	WR4AFV	146.19	146.79	C
Jacksonville	WR4AJG	146.40	147.00	C U
Lake Toxaway	WR4AGH	147.81	147.21	P
Laurinburg	WR4AIB	146.07	146.67	C
Lenoir	WR4ACM	146.25	146.85	C
Lexington	WR4ABX	146.31	146.91	CA
Manteo	WR4AKB	146.34	146.94	C
Morganton	WR4	147.75	147.15	U
Mt Airy	WR4ACJ	146.37	146.97	C
Murfreesboro	WR4AFB	146.31	146.91	CA
Raleigh	WR4ACF	146.04	146.64	C
Raleigh	K4ITL	146.28	146.88	CA
Reidsville	WR4ADE	146.25	146.85	C
Roaring Gap	WR4AGS	146.22	146.82	C
Salisbury	WR4AAA	146.13	146.73	CA
Seven Springs	WR4AEF	146.25	146.85	C
Shelby	WR4ABF	146.28	146.88	C
Smithfield	WR4ALY	146.43	147.03	C U
Wilmington	WR4AHL	146.22	146.82	C
Winston-Salem	WR4ACA	146.04	146.64	CA

Asheville	WR4ALC	52.01	53.99	C U
Lenoir	WR4	52.78	52.525	P
Salis/Mocksvle	WR4	52.76	52.525	P

Asheville	WR4AKR	222.34	223.94	C
Durham	WR4AGC	222.34	223.94	C

Asheville	WR4AKR	449.90	444.90	C U
Charlotte	WR4AEI	450 Private		
Charlotte	WR4	449.10	444.10	P
Durham	WR4AGC	449.10	444.10	CA

C CVRA Member
A Autopatch
T Tone Access
* Temporary Call
U Under Construction
P Proposed
O Off air temporarily

South Carolina

Anderson	WR4AIO	146.37	146.97	C	U
Beaufort	WR4	146.31	146.91		U
Charleston	WR4AFX	146.34	146.94	C	T
Columbia	WR4ACD	146.34	146.94	CA	T
Columbia	WR4ABA	146.28	146.88	C	
Florence	WR4AGM	146.37	146.97	C	
Greenville	WR4ADG	146.01	146.61	C	
Greenville	WR4ABG	146.34	146.94	C	T
Greenville	WR4	146.22	146.82		
Lancaster	WR4ABM	146.10	146.70		
North Augusta	WR4ABB	146.13	146.73	C	
Orangeburg	WR4				P
Pickens	WR4ADP	146.40	147.00	C	
Rock Hill	WR4AJO	146.43	147.03	C	U
Charleston	WR4AFX	449.10	444.10	C	U

Virginia

Alexandria	WR4	147.75	147.15		U
Barren Springs	WR4AFQ	146.07	146.67		
Blue Mountain	WR4ADZ	146.37	146.97		
Charlottesville	WR4ADV	146.28	146.88		
Chesapke/Norflk	WR4ACN	146.19	146.79	CA	
Danville	WR4AHG	146.10	146.70		
Fairfax	WR4AAD	146.19	146.79		
Galax	WR4AHR	147.69	147.09	C	
Hampton	WR4ALH	146.13	146.73		U
Hampton	WR4AFT	146.34	146.94	C	T
Lexington	WR4ABU	146.01	146.61	C	
Lynchburg	WR4ADY	146.34	146.94	C	
Lynchburg	WR4AEN	146.16	146.76		
New Market	WR4	147.93	147.33		P
Portsmouth	WR4	146.25	146.85		U
Richmond	WR4ADI	146.34	146.94		
Richmond	WR4ACW	146.28	146.88	CA	
Roanoke	WR4AFE	146.28	146.88	C	
Roanoke	WR4AFY	146.38	146.98		
Roanoke	WR4AHT	146.34	146.94		
Roanoke	WR4AMQ	146.13	146.73	C	U
Staunton	WR4ACL	146.37	146.97		
Suffolk	WR4AKS	146.40	147.00	CA	
Tysons Corner	WR4ABR	146.31	146.91		
Virginia Beach	WR4AAC	146.37	146.97	CA	
Winchester	WR4AGT	146.22	146.82		
Woodbridge	WR4AYY	147.84	147.24		
Lexington	WR4ABU	52.01	53.01	C	P
Tysons Corner	WR4AEY	222.34	223.94		
Woodbridge	WR4AIJ	223.22	224.82		
Roanoke	WR4AHT	447.75	443.75		U

DISTRIBUTION OF TWO METER REPEATERS

	NORTH CAROLINA	SOUTH CAROLINA	VIRGINIA
01/61		Greenville	Lexington
04/64	Asheville, Raleigh Winston-Salem		
07/67	Burlington, Laurinburg Forest City		Barren Springs
10/70	Greenville(TN)	Lancaster	Danville
13/73	Salisbury	No. Augusta	Hampton, Roanoke
16/76	Grifton, Asheville Greensboro, Kingsport(TN)		Lynchburg
19/79	High Pt, Johnson City(TN)		Chesapeake, Fairfax
22/82	Ashevle,Charlotte,Durham Wilmington, Roaring Gap	Greenville	Winchester
25/85	Lenoir, Reidsville Seven Springs		Portsmouth
28/88	Raleigh, Shelby	Columbia, Savannah(Ga)	Charlottesville, Richmond, Roanoke
31/91	Fayetteville, Lexington Murfreesboro	Beaufort	Tysons Corner
34/94	Aurora,Charlotte,Durham beulaville, Manteo	Charleston, Columbia Greenville,Augusta(Ga)	Hampton, Lynchburg Roanoke, Richmond
37/97	Mt Airy	Anderson, Florence	Roanoke(38/98),Blue Mtn Staunton,Virginia Beach
40/00	High Point,Jacksonville	Pickens	Suffolk
43/03	Smithfield	Rock Hill	
46/06	Charlotte,Elizabeth City		
69/09	Greenville		Galax
72/12	Greensboro		
75/15	Durham, Morganton		Alexandria
78/18	Burlington, Charlotte		
81/21	Lake Toxaway		
84/24	Franklin		Woodbridge
87/27			
90/30	Fairview(24/90)	Augusta(Ga)	
93/33			New Market
96/36			
99/39			

SEE YOU AT THE DURHAM FM CONVENTION ON MAY 17 & 18

CLUB MEETING CALENDAR

NORTH CAROLINA

ASHEVILLE	Buncombe co. ARC, 1st Thu, 1930, County Court House
ASHEVILLE	WNC VHF Group, 2nd Mon, 1900, Dinner Mtg @ Grace Rest on Merrimon
CHARLOTTE	Mecklenburg ARS, last Tue, 1930, Red Cross Bldg on Park Rd, W4BFB/WR4AEU(34/94)
CHARLOTTE	Charlotte RC, Thu, 1900, Club in Bldg @ WSOC-TV on N. Tryon St., Bus Mtg 1st Thu. W4CQ/WR4ALO(46/06)
CHARLOTTE	Friday Lunch Group, Fri, 1200, Shoneys on Independence Blvd.
DURHAM	Durham FM Assn, 2nd Tue, 1800, Bonanza Steak House, Roxboro Rd, Dinner followed by program. WR4AGC(22/82)
FAYETTEVILLE	Cape Fear ARS, 3rd Mon, 1900, Methodist College. WR4ADK(31/91)
GREENSBORO	Greensboro RC, Fri, 1930, Club House near Friendship Airport. Bus Mtg 1st Fri. W4GG
GREENSBORO	H.A.M.L.E.T. 3rd Fri, 1830, Bonanza Steak House I40 & Jamestown Rd
JACKSONVILLE	Onslow ARC, 2nd Sat, 2200, Howard Johnsons Restaurant
LEXINGTON	Healing Springs Mtn VHF Soc, last Mon, 1930, Burlington House Furniture Co Personnel Office. W4PAR/WR4ABX(31/91)
RALEIGH	Raleigh ARS, 1st Wed, 1930, CD Room in NC State Admin Bldg. W4DW, WR4ACF(04/64)
SALISBURY	Rowan ARS, 2nd & 4th Mon, 2000, Salisbury City Hall. W4EXU/WR4AAA(13/73)
WINSTON-SALEM	Forsyth ARS, 2nd Fri, 1930, Naval Reserve Tng Ctr.

SOUTH CAROLINA

CHARLESTON	Holiday VHF Soc, 2nd Wed, 1930, Holiday Inn Riverview. WR4AFX(34/94)
COLUMBIA	Carolina Rptr Soc, 1st Mon, 1930, Providence Pres Ch. WR4ACD(34/94)
GREER	Greer ARC, 1st Mon, 1930, Mtg Loc Announced Monthly. WR4ABG(34/94)

VIRGINIA

LYNCHBURG	Lynchburg ARC, 2nd Tue, 2000, Beulah Baptist Ch. K4HEX
NEWPORT NEWS	SPARC, 1st & 3rd Wed, 1930, Vepco Bldg, Hampton. WR4ALH(13/73)
NORFOLK	Hampton Rds Rad Assn, Next mtg to be dinner mtg in June, Loc to be announced, WA4MMP for details. WR4ACN(19/79)
RICHMOND	Richmond Amateur Telecommunications Soc (RATS), 1st & 3rd Fri, 1930, The Stone House, Forrest Hill Park. WR4ACW(28/88)
VIRGINIA BEACH	Virginia Beach ARC, 1st Tue, 1930, Plaza Fire Stn. WR4AAC(37/97)

NET REGISTER (Local Time Shown)

TWO METERS

Fayetteville, NC	WR4ADK	31/91	Cape Fear ARS Net	Daily	1930
Lexington, Va	WR4ABU	01/61	Central Virginia Traffic Net	Daily	2000
Salisbury, NC	WR4AAA	13/73	Central North Carolina Tfc Net	Daily	2200
Raleigh, NC	WR4ACF	04/64	RARS Net	MTThF	2000
Richmond, Va.	WR4ACW	28/88	Amateur Traffic & Trouble Net	MTWTh	2030
Burlington, NC	WR4AIF	07/67	Alamance AREC Net	MWF	2100
Catawba Co., NC	Simplex	146.82	Catawba County RACES Net	Mon	1900
Norfolk, Va.	Simplex	145.80	Hampton Roads Emergency Net(AM)	Mon	2000
Charlotte, NC	WR4AEU	34/94	Mecklenburg ARS Net	Mon	2030
Lynchburg, Va.	WR4ADY	34/94	Lynchburg Two Meter Net	Tue	1900
Asheville, NC	WR4AKR	16/76	Western North Carolina Tfc Net	Tue	2030
Norfolk, Va.	Simplex	145.025	Tidewater SSB Net(2M) (SSB)	Tue	2100
Hampton, Va.	WR4AFT	34/94	Hampton Roads Emergency Net	Wed	2000
Lenoir, NC	WR4ACM	25/85	Western Piedmont Emergency Net	Wed	2100
Winston-Salem, NC	WR4ACA	04/64	Forsyth Co AREC/RACES Net	Wed	2130
Grifton, NC	WR4ABP	16/76	ENC Emergency Net	Thu	2000
Greensboro, NC	WR4ABL	72/12	Guilford County Emergency Net	Thu	2100

SIX METERS

Richmond, Va.	50.250	Central Virginia Net (AM)	Daily	1900
Lexington, NC	50.120	North Carolina 6 Meter Assn Net	Sun	0900
Atlanta, Ga.	50.110	Interstate Net	Sun	2100
Charlotte, NC	50.400	Charlotte Hornet Net	Sun	2100
Norfolk, Va.	50.150	Tidewater SSB Net (6M)	Tue	2000
Glendale Springs, NC	50.120	North Carolina Six Meter Net	Thu	2100

THE CENTRAL NORTH CAROLINA TRAFFIC NET

The Central North Carolina Traffic Net meets daily at 2200 hours local time on WR4AAA, 13/73 in Salisbury. The net has been in daily operation since April 4, 1972. There is a different Net Control Station each evening and check ins average around 30, representing over 17 counties in the Central section of North Carolina. Sessions usually total around 15 minutes. In the event of failure of the 13/73 machine, the net will move to WR4AGS, 22/82, at Roaring Gap, or to 52 Simplex. Net Manager is K4GHR and Assistant Net Manager is W4TYE. Net Controls and Alternates are:

	NET CONTROL STATION			ALT. NET CONTROL STATION		
Sun	W4IRE	John Huffman,	Winston-Salem	W4WXZ	Chuck Brydges,	Winston-Salem
Mon	WA4FUV	Jim Key,	High Point	K4RWV	Oscar Poindexter,	Clemmons
Tue	W4IPP	Allen Smith	Lexington	K4QDM	Ray Stewart,	Winston-Salem
Wed	WB4QWC	Bud Ayers	Lenoir	K4IAR	Joe Lucas	Greensboro
Thu	WA4IAG	Jake Martin	Jonesville	WA4ASK	Pete Lea	Lexington
Fri	K4DJ	Richard Moser	Hickory	W4NZJ	Jud Whatley	Salisbury
Sat	W4TYE	Bob Weaver	Sherrill's Ford	WB4SNA	Tom Talbert	Advance

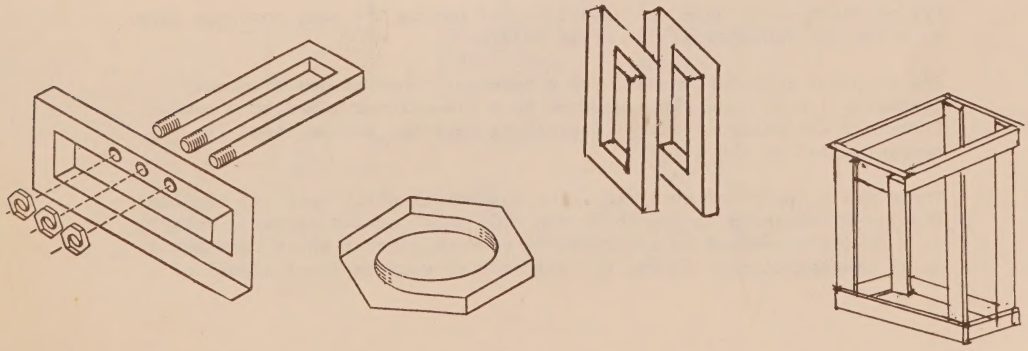
If you are around the area any evening, please check in with us.

HOW HIGH IS THAT TWO METER REPEATER ?

The following transmitting antenna heights are based on data supplied the CVRA on membership applications submitted in January 1975. If data on a particular repeater is missing, either a description was not submitted, or the HAAT info was not included. Repeaters are arranged in descending altitude based on Height Above Average Terrain (HAAT). Additionally, the height above Mean Sea Level (MSL) is also indicated. It should be noted that regulations provide for Effective Radiated Power (ERP) to be decreased as altitude (HAAT) increases:

HAAT:	Above 1000'	500 - 999'	100 - 499'	50 - 99'	Below 50'
ERP:	100 watts	200 watts	400 watts	400 watts	800 watts

	REPEATER	HAAT	MSL
01/61	WR4ABU Lexington, Va	2500	4020
16/76	WR4AKR Asheville, NC	2430	6000
04/64	WR4ALC Asheville, NC	+2000	4300
22/82	WR4AGS Roaring Gap, NC	2000	3000
13/73	WR4AMQ Roanoke, Va	1500	2500
16/76	WR4ABP Grifton, NC	1100	1330
34/94	WR4ABG Greenville, SC	1100	2111
16/76	WR4ADO Kingsport, TN	903	2280
69/09	WR4AMB Greenville, NC	750	820
40/00	WR4ADP Pickens, SC	680	1735
46/06	WR4ALO Charlotte, NC	600	1400
25/85	WR4ACM Lenoir, NC	550	1850
34/94	WR4ACD Columbia, SC	550	720
16/76	WR4 Greensboro, NC	527	1330
07/67	WR4AHA Forest City, NC	500	1700
37/97	WR4ACJ Mt. Airy, NC	480	1852
04/64	WR4ACF Raleigh, NC	450	800
28/88	WR4ABF Shelby, NC	450	1110
28/88	WR4ABA Columbia, SC	400	604
22/82	WR4AHL Wilmington, NC	364	375
22/82	WR4AGC Durham, NC	363	970
13/73	WR4AAA Salisbury, NC	358	1110
31/91	WR4AFB Murfreesboro, NC	343	-
07/67	WR4AIB Laurinburg, NC	320	520
28/88	WR4AFE Roanoke, Va.	278	1850
19/79	WR4AFV High Point, NC	275	1135
34/94	WR4AEU Charlotte, NC	270	1180
13/73	WR4ABB No. Augusta, SC	270	592
34/94	WR4AFT Hampton, Va.	240	240
25/85	WR4ADE Reidsville, NC	207	950
46/06	WR4ADN Elizabeth City, NC	200	200
37/97	WR4AGM Florence, SC	200	-
04/64	WR4ACA Winston-Salem, NC	175	850
25/85	WR4AEF Seven Springs, NC	175	295
43/03	WR4AJO Rock Hill, SC	160	880
07/67	WR4AIF Burlington, NC	160	750
19/79	WR4ACN Chesapeake, Va	150	170
37/97	WR4AAC Virginia Beach, Va	125	140
31/91	WR4ABX Lexington, NC	111	875
34/94	WR4AKB Manteo, NC	110	110
31/91	WR4ADK Fayetteville, NC	100	300
34/94	WR4ADS Beulaville, NC	95	100
34/94	WR4ABQ Aurora, NC	90	99
34/94	WR4ADY Lynchburg, NC	88	1108
40/00	WR4AKS Suffolk, Va.	85	135
22/82	WR4ABT Charlotte, NC	75	789
75/15	WR4AJV Durham, NC	- 1	367
16/76	WR4AEN Lynchburg, Va	- 13	790
22/82	WR4AGF Asheville, NC	-400	2250



WHAT IS A REPEATER?

Before we review "What is a Repeater?", let's first talk briefly about VHF communications in general. Except during unusual weather or atmospheric conditions, on VHF (frequencies above 50 mHz) radio signals tend to travel in a straight line, and communications can only be considered to be "reliable" over a "line of sight" path. The best example of this type of communications is that with which all of us are familiar -- the commercial TV bands. You must get your TV receiving antenna into the air and pointed at the TV station to insure a good picture --- or you have to be close to the station.

Amateurs on VHF can communicate point to point over very large distances using directional antennas and tall towers. However, mobile to mobile communications has very limited range and mobile to base communications depends primarily on the facilities at the base station. This type of communication is referred to as "simplex" operation -- stations talking directly to one another on the same frequency.

To expand the range of the mobile, portable station, or base station that has a poor location, necessitates the addition of a relay station- or what is better known as a repeater. A repeater is a combination of a receiver and a transmitter that receives and retransmits a signal simultaneously. More commonly, the receiver is on one frequency, and the transmitter on another.

Usually the repeater station is located at an elevated site -- on top of a mountain, tall building, a tower, or a water tank. This provides the repeater with a much superior and expanded "line of sight" coverage area. This results in the mobiles, portables, and low powered base stations having an effective coverage area equal to the repeater.

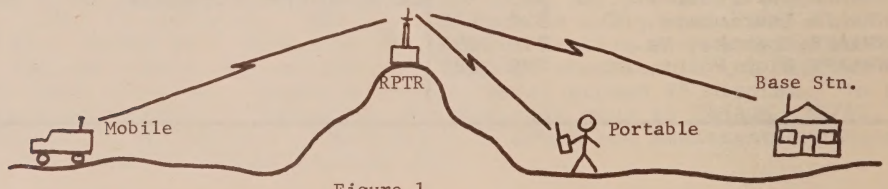


Figure 1

All of these units have the capability of having the same coverage area by using the repeater as the relay point.

The simplest repeater consists of a receiver tuned to one frequency (repeater input) directly connected to a transmitter tuned to a second frequency (repeater output). Everything received on the input is retransmitted on the output.

There are a few other basic repeater components which make the repeater function. As shown in figure 2, the "COR", or Carrier Operated Relay", is a device connected to the receiver squelch circuit which provides a relay contact closure to key the transmitter when an input signal of

adequate strength is present. In other words, when the input signal opens the squelch of the receiver, the relay contacts of the COR close and automatically key the transmitter -- just as you do when you press the mic button on your rig.

A three minute timer is inserted in the keying line between the COR and the transmitter. The timer is not in the circuit to prevent long contacts , nor to discourage use of the repeater-- but is put there to conform to FCC regulations. If for some reason the receiver "hangs up" or if someone holds a signal on the repeater input for more than 3 minutes, the timer will shut the repeater down. The timer resets during the pauses between transmissions and does not interfere with normal communications. The timer is but one of several "safety valves" in the repeater circuit.

As with all amateur stations, there must be a licensed operator in control of the repeater at all times. If this operator is not located at the repeater site itself, then there must be a method for an operator to control the repeater from a remote control point (or points). Remote control of the repeater is usually by radio or telephone. A radio receiver or telephone at the repeater site is coupled to a "control decoder". The "control decoder" responds to signals or commands from the receiver or telephone to turn the repeater on and off.

Each repeater is equipped with an automatic identifier which sends the call letters of the repeater periodically. This may be CW or voice, depending on the desires of the owner.

This is by no means a complete description of all repeaters but does provide a general explanation of a basic repeater. There are as many variations in repeaters as there are in individual amateur stations around your area -- they all have a receiver, transmitter, and an antenna -- but after that, the similarity comes to an end. There are numerous other components that can be added to the machine to provide expanded functions and services, such as an autopatch, or additional control functions. You should become familiar with the basic operation of your "Home" repeater -- it's not really as complicated as you might think.

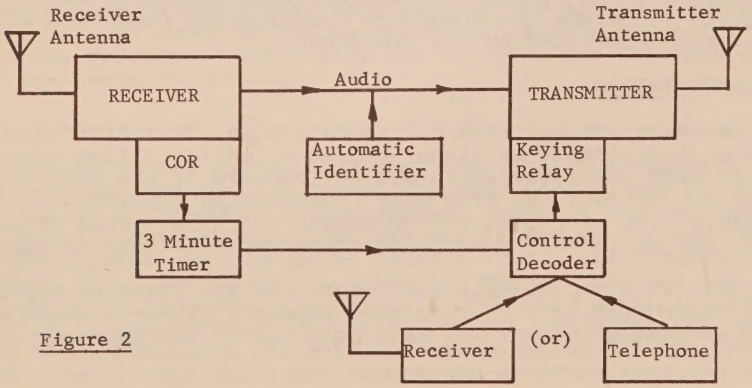


Figure 2

FREQUENCY COORDINATION AND CONTROL PROCEDURES

FCC REGULATIONS

When the FCC modified portions of Part 97 of the Rules and Regulations regarding the "Licensing and Operation of Repeater Stations" on October 17, 1972, (Docket 18803) included in the text associated with the modifications was a statement regarding repeater frequency coordination: "The Commission is persuaded by the comments and by observation that regional and national frequency planning and coordination by amateur radio operators themselves can result in the best spectrum utilization appropriate to the service. However, we are prepared to reverse this decision should plans and their implementation not occur within a reasonable period."

THE CVRA PURPOSE

The Carolinas-Virginia Repeater Association, founded in March 1971, as the North Carolina FM Repeater Association, is committed in its Constitution and Charter "To serve as a voluntary coordinating body for VHF/UHF repeater and simplex frequencies for the Amateur Radio Service in the three states of North Carolina, South Carolina, and Virginia" ..... thus providing the coordinated effort expressed in the FCC comments.

The FCC has set aside certain portions of each of the VHF/UHF bands for use by repeaters. They did not specify which of these frequencies should be used for repeater inputs or outputs, nor how far apart the input and output frequency of a repeater should be. This job was left up to the amateurs. Through the efforts of ARRL and numerous Regional Repeater Groups, such as ours, standard band plans were drawn up establishing recognized channels for repeaters and for simplex activities in the 50, 144, 220, and 420 mHz Amateur Bands. This has allowed the amateur to "crystal up" a rig on frequencies used in his immediate area, yet have the capability of using these channels wherever he may go.

ORGANIZATION

The organization of the CVRA is centered around the Frequency Coordination Function. The three state area of North Carolina, South Carolina, and Virginia has been divided into nine districts, each with a Director and Vice Director elected for two year terms by the Repeater Representatives in each district. The nine Directors formulate the Frequency Coordinating Committee which is headed by a Chairman appointed by the President.

FREQUENCY RECOMMENDATIONS

The Directors maintain contact with all Repeaters in their districts and actively solicite leads on individuals or clubs interested in installing repeaters. They maintain contact with repeaters which are not members of the CVRA to minimize conflicts which may arise. The Frequency Coordinating Committee Chairman maintains a Master List of repeater frequencies which have been recommended to various groups, and periodically provides these updated lists to the Directors.

The Directors work with individuals and groups who are planning repeater installations within their districts to recommend repeater channels which will provide interference free communications and make best use of the spectrum space available.

The Director and potential repeater owner must consider the transmitter power level, type antenna system, and HAAT which is anticipated, plus the general terrain features, adjacent repeaters, and repeaters which are currently using the channel in question, or expecting to use the channel. Once a tentative proposal has been established, the repeater group, or individual, submits a letter to the Director requesting the channel. The letter is endorsed by the Director and sent to the Chairman of the Frequency Coordinating Committee.

The Chairman will notify the Directors in adjoining districts, and all known repeater groups using the selected channel within a 200 mile radius of the proposed site (this may be extended for special cases), of the intent to place a new repeater on the air. Details such as expected coverage area, ERP, HAAT, etc, will be furnished. Objections will be received during the next two weeks.

Opposition comments will be reviewed with the repeater owners in question, plus the Directors of the appropriate Districts to establish the types and magnitudes of the problems which may arise. Alternative recommendations will be made at this time, and the entire process starts again. If there is no opposition the Chairman will sign the letter on behalf of the Association, and return it to the applicant, with copies to the Director and President, indicating that the CVRA recommends usage of the frequency indicated, assuming ERP and HAAT notations included in the letter from the applicant are not exceeded. This will then be published in the next quarterly issue of "The Repeater Journal", the official organ of the CVRA.

Changes to existing repeaters which will significantly effect the coverage area will be approached in the same manner.

After a recommendation for a frequency has been made to a repeater group or individual, that recommendation is considered to be valid for a period of three months. If the group has not got the repeater on the air, they may request, and obtain, three month extensions as long as a reasonable explanation for the delay can be offerred. There is no intent here to force a group into a comprimising situation, yet, the CVRA cannot continually defend a reserved frequency for a particular area if no apparent progress, or intent, is being shown by the individual or group in question.

If a repeater is taken out of service for any reason, planned or unplanned, the Director and Chairman should be immediately notified stating the situation. If plans are being made to get the machine back on the air, the three month procedure established above should be followed. If the machine is off the air permanently, the Trustee should notify the Director and Chairman so the frequency can be made available for re-use.

COOPERATION

It must be understood and appreciated that the Carolinas-Virginia Repeater Association does not "assign" or "give" repeater frequencies to anyone. No one can give or assign a frequency in the amateur bands to anyone; for any amateur, within the limits of his license, may use any frequency for any legal purpose, on a non interfering basis as long as he remains within his license authorization, and within Part 97 of the Regs. As a result, the Association has no enforcement powers, and can only recommend frequencies. The only penalties for neglecting to advise the CVRA of your present operation, or for neglecting to obtain or disregarding recommendations for your future operation, is the possible interference from other groups which may reduce the effectiveness and enjoyment of your system, and of your neighbors.

FREQUENCY COORDINATION AND CONTROL PROCEDURES .....cont'd

The best, and most effective way to insure cooperation is for all operators and users to continually "talk up" the Association, and to make sure that newcomers are made aware of its existance and its purpose. The Association will be effective only when everyone respects the actions and recommendatons that it makes.

ARBITRATION

There are going to be occassions, when even with the best of effort and intent, interference problems will exist and seemingly unresolveable problems will arise. These problems will be reviewed with the Directors and Repeater Owners involved to determine if a solution can be achieved. If for some reason agreement cannot be reached on a solution to the problem, the President will appoint a three member Arbitration Panel composed of competent amateurs not directly related or involved with the problem, to provide a solution. Agreement to abide by the decision of the panel must be obtained from the parties involved before the panel is appointed. A separate panel will be appointed for each case. It should be noted that Arbitration will not be rushed into lightly, for the Repeater Owners and Directors should be able to agree to solutions on the vast majority of cases which will arise.

NOTICE TO ALL DIRECTORS: This is a proposed procedure to be used in the future. Please review and submit your comments to Charles Durst, WA4WTX, Chairman of the Frequency Coordinating Committee.

REPEATER TIPS

DO'S

DO KEEP ALL TRANSMISSIONS SHORT. Emergencies don't wait for monologues to be finished. If you talk to hear your own voice what you want is a tape recorder, not an fm rig.

DO THINK BEFORE YOU TRANSMIT. If you can't think of anything worth saying, don't say anything.

DO PAUSE A COUPLE OF SECONDS BETWEEN EXCHANGES. Someone with a high-priority need for the repeater may want to break in; also, some repeaters are configured so that a brief pause in transmissions is necessary to reset the three-minute timer.

DO IDENTIFY PROPERLY. "W6XYZ mobile" is not enough, even if you're three hundred miles from another call area; "W6XYZ mobile 6" is required. You must give the call of the station with whom you were in contact at the end of the contact.

DO BE COURTEOUS. A repeater is like a telephone party line, and requires the same kind of cooperation in its use.

DO USE SIMPLEX WHENEVER POSSIBLE. Leave the repeaters available for those who need them.

DO USE THE MINIMUM POWER NECESSARY to maintain communication. Not only is this an FCC requirement, it's also common courtesy.

DO SUPPORT YOUR LOCAL REPEATER CLUB. even if it doesn't require all users to be members. Maintaining a good machine is an expensive undertaking, and you should do your share.

DON'TS

DON'T ABUSE AUTOPATCH PRIVILEGES. business messages are not permitted in the amateur service. Don't force the control operator to terminate your call in order to avoid a violation.

DON'T BREAK INTO A CONTACT unless you have something to add. Interrupting is no more polite on the air than it is in person.

DON'T FORGET THAT AMATEUR RADIO IS ALLOCATED FREQUENCIES BECAUSE IT IS A SERVICE, not just a hobby. Don't neglect the public service aspects of vhf fm communication, such as accident reporting, emergency preparedness, etc.

DON'T TRY TO PROVE WHAT A GREAT OPERATOR YOU ARE by criticizing the operating techniques of others on the air. Instead, set an example which others will be proud to follow.

DON'T MONOPOLIZE A REPEATER. The best repeater users are the ones who do a lot of listening, and little transmitting.

DON'T FORGET THAT WHAT YOU SAY OVER A REPEATER CAN BE HEARD OVER THOUSANDS OF SQUARE MILES by anyone with an inexpensive "public service band" monitor. These people are potential hams; if they like what they hear on the air, they will want to get licenses and join us. Don't leave them with a bad impression of our hobby by making thoughtless or off-color remarks.

GREENSBORO, NC — WR4

146.16/146.76 — 50 watts ERP — 0615 -2300 daily

This repeater has been more recently operating under the call of WR4ABL, but it is temporarily off the air awaiting a new license. From its site, one mile north of Summerville on an ex UHF TV tower (CH 48), the repeater provides good mobile coverage in the counties of Guilford, Forsyth, Alamance, Randolph, Stokes, Rockingham, and Chatham. Base stations from these cities easily access: Boone, Concord, Salisbury, Winston-Salem, Blacksburg, Martinsville, Chapel Hill, & Siler City. The Motorola Sensicon A receiver strip and 60 watt Xmtr strip feed through a Sinclair 4 cavity duplexer to a Stationmaster antenna at 527' HAAT & 1330' MSL. This is an open repeater and is carrier accessed. ID is via CW. Repeater Trustee will be A. W. Greeson, W4AGD. Owners of the repeater are W4BUZ, W4AGD, & W4FRH. Reps to the CVRA are W4BUZ & K4CAW.

GREENVILLE, NC — WR4AMB

147.69/147.09 — 150 watts ERP — 24 hours daily

The Greenville Repeater Association recently installed this fine repeater on the WNCT-TV Tower in Greenville. From its HAAT of 750' & MSL of 820'it provides good mobile coverage in the counties of Pitt, Nash, Edgecombe, Caswell, Lenoir, Craven, Wilson, & Beaufort. Stations from Tarboro, Washington, New Bern, Rocky Mount & Kinston frequently use this machine. The repeater is open and is carrier accessed. ID is via CW. Equipment includes a GE Master Progress line and a Stationmaster antenna. An autopatch will be installed connecting the Greenville exchange in the future. Trustee is Heber Adams, W4GDF. Reps to the CVRA are W4GDF and W4JVP.

GRIFTON, NC — WR4ABP

146.16/146.76 — 92 watts ERP — 24 hours daily

The ENC Repeater, Inc sponsor this repeater which is located on the WITN-TV tower. Consistent mobile coverage extends 50 miles to include Pitt, Lenoir, Greene, Craven, Pamlico, Beaufort, Edgecombe, Wilson, Onslow, Duplin, and Wayne counties. Base stations within 75 miles of Grifton easily access the machine. Repeater equipment consists of an Aerotron 600 Exciter feeding a HA-202 amplifier and a receiver homebrewed from Aerotron boards. The Rcvr antenna system is 2 GAM TG4MS antennas at 1300' and the Xmtr antenna is a Stationmaster at 1100' mounted on the SW leg of the tower. Both the Rcvr and Xmtr are mounted in cast aluminum boxes near the 1100' level. Transmitting antenna HAAT 1300' & 1330' MSL. The receiving antenna system will soon be replaced with another Stationmaster at 1300'. ID is via CW @20 wpm. The rptr is open and is carrier accessed. Trustee is Bill Page, WB4LWX. Reps to the CVRA are WA4UQC and W4NXY.

HIGH POINT, NC		WR4AFV
146.19/146.79	90 watts	24 hours daily

The Carolina Amateur Radio Society, Ltd sponsors this machine which provides good mobile coverage to the counties of Guilford, Forsyth, Randolph, Davidson, and Alamance. Base stations from Greensboro, Winston-Salem, Burlington, Lexington, Salisbury, Asheboro, and Thomasville easily operate through this repeater. A GE MASTR feeds 90 watts to a single Stationmaster at 275' HAAT and 1135' MSL, from its site off Wallburg Road in High Point. This is an open repeater and is carrier accessed. ID is via CW. An autopatch is under construction. Trustee is David Rawley, W4WDI/W4NHD. Reps to the CVRA are W4WDI and WB4BWY

JACKSONVILLE, NC		WR4AJG
146.40/147.00	75 watts	0600 - 2400 daily

The Onslow ARC sponsors this repeater which provides coverage to mobiles in Onslow, Jones, Duplin, Pender, Eastern Carteret, Southern Craven, and Southern Lenoir Counties. Base stations from Kinston, New Bern, Moorehead City, Wilmington, Goldsboro, Kenansville, Swansboro, and Trenton frequently operate through this repeater. A GE Progress Line repeater feeds a Stationmaster at 260' HAAT & 280' MSL. The site is about 1 mile Northwest of Jacksonville on US 258. This is an open repeater and is carrier accessed. ID is via CW. Trustee is Sid Purvis, WA4VBC. Reps to the CVRA are WB4ERZ & WB4MYO.

LAURINBURG, NC		WR4AIB
146.07/146.67	20 watts	0600 - 2400 daily

WR4AIB is owned and operated by Tom Norman, WA4AIV, from a CATV tower site in Laurinburg. Equipment includes an IT&T Autocom MT-600 and two Ringos separated 40'. The Xmtr antenna is at 320' HAAT & 520' MSL. Good mobile coverage is provided to the counties of Robison, Hoke, & Scotland in NC and Marlboro in SC. This is a carrier accessed, open repeater. ID is via CW. An autopatch is planned. Reps to the CVRA are WA4AIV & K4QWK.

LENOIR, NC		WR4ACM
146.25/146.85	25 watts	0700 - 2400 daily

The Hibriten Radio Club sponsors the WR4ACM repeater from its site atop Hibriten Mtn. Good mobile coverage is provided to the counties of Caldwell, Catawba, Burke, & Alexander. Base stations from Hickory, Charlotte, Winston-Salem, Salisbury, Lexington, & Shelby frequently use this machine. The repeater transmitter is a 60 watt Motorola unit and the receiver is a Motorola Sensicon A. The antenna system consists of two Ringos with the Xmtr antenna at 550' HAAT & 1850' MSL. This is an open, carrier accessed repeater. ID is via CW. Trustee is WB4QWC, Bud Ayers. Reps to the CVRA are WB4QWC and K4HTV.

LEXINGTON, NC — WR4ABX

146.31/146.91 — 300 watts ERP — 0700-0900 & 1400-2300 daily

The Healing Springs Mtn VHF Society operates WR4ABX providing mobile coverage to Davidson, Rowan, and Forsyth Counties. Base stations from Greensboro, Mocksville, Winston-Salem, High Point, Asheboro, Salisbury, and Kannapolis frequently use this machine. Equipment consists of a Motorola exciter, a homebrew amplifier, and a GE solid state receiver. The two ASP-681 antennas are installed on two city owned water tanks. The Xmtr antenna is at 875' MSL and 111' HAAT. ID is via CW. This is an open, carrier accessed repeater. The autopatch may be accessed by the * and disconnected by the #. Trustee is Rae Everhart, W4WAU. Reps to the CVRA are W4WAU & WA4JVD.

MANTEO, NC — WR4AKB

146.34/146.94 — 10 watts — 0600 - 2400 daily

Operating from Radio Station WOBR, this machine provides good mobile coverage the the area within 25 miles of Manteo. The Xmtr antenna is at 110' HAAT. A new Standard ARPT-1 solid state repeater has recently been placed into service by the Trustee and caretaker, Goodrich Willaims, W4PCN. ID is via CW. The repeater site is .6 mile north of Manteo on US 64-264. This is an open, carrier accessed repeater. An autopatch is in the planning stages along with a solid state 40 watt amplifier. Reps to the CVRA are W4PCN & W4ACY

MT. AIRY, NC — WR4ACJ

146.37/146.97 — 250 watts — 0700 -0100 daily

The Piedmont Amateur Radio Assn operates WR4ACJ from Dix Hill, 3½ miles east of Hwy 52 on Cook School Road. The transmitting antenna array consists of four 4 element beams phased at 60'. The receiving antenna is a 6dB omni at 120'. The Xmtr antenna is 1852' MSL and 480' HAAT. The repeater itself is a converted Motorola Sensicon base station feeding into a Motorola amplifier. ID is via CW. Area of consistent mobile coverage includes the counties of Surry, Davie, Rowan, Forsyth, Stokes, Wilkes, Alleghany, and Rockingham. This is an open, carrier accessed repeater. Trustee is Bill Lamm WA4BNY. Reps to the CVRA are WA4BNY and WA4CQK.

MURFREESBORO, NC — WR4AFB

146.31/146.91 — 65 watts — 24 hours daily

The Tri-County ARA operates this repeater serving the counties of Hertford, Northampton, Gates, & Bertie in NC and Southampton in Va. Base stations in Ahoskie, Windsor, Conway, Roanoke Rapids and Suffolk easily access this repeater. The Motorola receiver and GE Xmtr feed into a single GAM antenna at 300' MSL. The site is at WWDR about 2 miles south of town. This is an open repeater and is carrier accessed. ID is via CW. The autopatch is available to club members who will bring up the patch for non members. The original Trustee of this repeater was Don Burnett, W4TFZ, who died of a heart attack in January 1975. Present Trustee is Rodney Bland, WA4ZGQ. Reps to the CVRA are WA4ZGQ & K4ERT.

RALEIGH, NC		WR4ACF
146.04/146.64	40 watts	24 hours daily

The Raleigh Amateur Radio Society operates WR4ACF from its site on a CATV tower 1 mile NW of Six Forks Road. Mobile coverage is provided in Wake, Durham, Orange, Chatham, Lee, Harnett, Johnston, Wilson, Nash, Franklin and Granville counties. Base stations from Greensboro, Asheboro, Fayetteville, Clinton, Kinston, Greenville, Roanoke Rapids, and Danville easily access this repeater. The Xmtr is a Motorola G Strip and the Receiver is a Sensicon A. The receiving antenna is a commercial J-Pole and the Xmtr antenna is a Cushcraft AFM-4D mounted at 450' HAAT and 800' MSL. ID is via CW. An autopatch is being planned. This is an open, carrier accessed repeater. Repeater Trustee is Lee Johnson, WA4ZNA. Reps to the CVRA are WA4ZNA and WA4PEN.

REIDSVILLE, NC		WR4ADE
146.25/146.85	42 watts	0730 - 2330 daily

This repeater provides mobile coverage to the NC counties of Rockingham, Caswell, and Guilford and the VA counties of Henry & Danville. Base stations from Danville, Burlington, Durham, Greensboro, Winston-Salem, Mt Airy, Asheboro, and Martinsville easily access this repeater. The repeater is a RCA Carphone feeding through a Sinclair duplexer to a Stationmaster at 207' HAAT & 950' MSL. this is a carrier accessed, open repeater with a CW ID. Trustee is Harold Pennington, K4YFT. Reps to the CVRA are K4YFT & K4YEC.

ROARING GAP, NC		WR4AGS
]146.22/146.82	100 watts ERP	24 hours daily

The Blue Ridge ARA operates this repeater from its site in Alleghany County just off the Blue Ridge Parkway at Roaring Gap. The equipment includes a Mo Motorola Sensicon receiver and a 30 watt Motorola Transmitter. The receiving antenna is a DB-224 and Xmtr antenna is a Cushcraft AFM-4D mounted at 2000' HAAT to the South and 3000' MSL. Mobile coverage is provided to the counties of Alexander, Alleghany, Catawba, Davidson, Davie, Forsyth, Iredell, Rowan, Stokes, Surry, Wilkes and Yadkin. Base stations from Charlotte, Asheboro, Greensboro, Morganton, Hickory, High Point, Kannapolis, and Winston-Salem frequently use the repeater. This is an open, carrier accessed repeater with a CW ID. Trustee is Steve Kelly, WB4PPS. Reps to the CVRA are WB4QCY & WB4PZA.

SALISBURY, NC		WR4AAA/WR4AJD
146.13/146.73	100 watts ERP	0600 - 2400 daily

The Rowan Amateur Radio Society and Barber Junction Repeater Club operate this repeater from its site atop Young's Mtn 1 mile north of Barber, NC. Mobile coverage is provided in the counties of Rowan, Iredell, Davie, Davidson, Forsyth, Yadkin, and parts of Alexander & Stanley. Base stations from Winston-Salem, Charlotte, Greensboro, Hickory, Shelby, Albemarle, and Asheboro easily access the repeater which is open & carrier accessed. The Motorola Xmtr feeds 2 phased Cushcraft AFM-4D antennas at 358' HAAT & 1110' MSL. The recr antenna is a Stationmaster 50' above the Xmtr ant. ID is via CW -- both calls. The autopatch may be accessed by the * and shut down with the #. Repeater Trustees are Bill Parris, K4GHR/WR4AAA and Tom Talbert, WB4SNA/WR4AJD. Reps to the CVRA are K4GHR and WB4SNA.

SEVEN SPRINGS, NC — WR4AEF

146.25/146.85 — 75 watts — 24 hours daily

This repeater offers good mobile coverage in Wayne, Lenoir, Greene, Pitt, Johnston, and Duplin counties from its site 3 miles west of Seven Springs near the intersection of NC 55 and NC111. The GE Progress Line unit feeds four 4 element beams phased N/E/S&W at 175' HAAT & 295' MSL. This is an open, carrier accessed machine and is equipped with a CW ID. Base stations from Raleigh, Wilson, Greenville, Jacksonville, Kinston, Goldsboro and New Bern operate through this repeater. Repeater Trustee is Don Price, WA4KLR. Reps to the CVRA are WA4KLR & WB4LWX.

SHELBY, NC — WR4ABF

146.28/146.88 — 200 watts ERP — 24 hours daily

The Shelby Radio Club operates this repeater from its site atop Whitaker Mtn near Blacksburg, SC. Mobile coverage is provided to Cleveland, Rutherford, Lincoln, Gaston, & parts of Mecklenburg counties in NC and Union, Cherokee, York and parts of Spartenburg in SC. The GE MASTR repeater feeds two Stationmaster antennas mounted on a 150' tower. The Xmtr antenna is at 450' HAAT and 1110' MSL. This is an open, carrier accessed repeater with a CW ID. Trustee is Carmel Honeycutt, WA4AJV. Reps to the CVRA are K4WHQ & WA4AGR.

WILMINGTON, NC — WR4AHL

146.22/146.82 — 346 watts ERP — 0600 - 2330 daily

The Wilmington VHF Assoc. Inc sponsors this repeater from its site on the WWAY-TV tower located 18 miles SW of Wilmington. The GE VO 36N uses two Cushcraft AFM-4D antennas with the Xmtr antenna at 364' HAAT and the receiving antenna 200' above the Xmtr antenna. Mobile coverage is provided in the counties of New Hanover, Pender, Brunswick, Columbus, Duplin, Bladen, and Onslow in NC and in Horry in SC. Base stations in Jacksonville, Fayetteville, Goldsboro, Lumberton, & Mrytle Beach easily access this repeater. This is an open repeater and is carrier accessed. ID is via CW. Autopatch plans are being formulated. Trustee is Elliott Hunter, WB4UNG. Reps to the CVRA are K4GMP & W4NTQ.

WINSTON-SALEM, NC — WR4ACA

146.04/146.64 — 50 watts — 0730 - 2330 daily

From its site atop the Baptist Hospital in the western part of Winston-Salem WR4ACA provides mobile coverage to Forsyth and parts of the surrounding counties. Base Stations from Greensboro, Mt Airy, Lexington, High Point, and Salisbury easily access this repeater. A Standard SCRPT-1 repeater feeds a TPL amplifier and uses two Stationmaster antennas. Xmtr antenna is 850' MSL. This is a open, carrier accessed repeater and is equipped with a CW ID. The autopatch may be accessed with the * and shutdown with the #. Trustee and owner is Bob Reagan, W4KGR. Reps to the CVRA are W4KGR and W4IRE.

CHESAPEAKE, VA. WR4ACN

146.19/146.79 120 watts ERP 24 hours daily

The Hampton Roads Radio Assn. operates WR4ACN which provides good mobile coverage to the cities of Portsmouth, Norfolk, Virginia Beach, Chesapeake, and Suffolk. The Motorola repeater feeds through a duplexer to a single GAM antenna at 150' HAAT & 170' MSL. The machine is located 5 miles SSE of downtown Norfolk in an area known as the Indian River section of the Washington boro of Chesapeake, Va. This is an open repeater and is carrier accessed. The autopatch may be accessed by "* 54" and disconnected by "#". The recorder runs 5 sec. after the"#" to record all data required. Trustee of WR4ACN is Richard Siff, WA4BUE. Reps to the CVRA area WA4MMK & W4JEM.

GALAX, VA. WR4AHR

147.69/147.09 50 watts 24 hours daily

From atop Briarpatch Mtn at 3440' MSL this machine provides good mobile coverage in the Virginia counties of Carroll, Grayson, Pulaski, Wythe, and the NC counties of Alleghany, Surry, Ashe, & Wilkes. Stations from Winston-Salem & Greensboro easily access this repeater. The machine consists of a GE Progress Line feeding two Cush Craft AFM-4D antennas separated 60' verticallly. This is an open, carrier accessed repeater. ID is via CW. Trustee is Roy L. Wright, K4AXQ. Reps to the CVRA are K4AXQ & WA4SIW.

HAMPTON, VA. WR4AFT

146.34/146.94 25 watts 24 hours daily

The Peninsula Emergency Amateur Radio Service (PEARS) sponsors this repeater which provides good mobile coverage to the cities of Hampton, Newport News, Norfolk, Virginia Beach, Portsmouth, Smithfield, and Williamsburg. The Motorola machine feeds a single Stationmaster at 240' HAAT. The repeater site is at Langley Air Force Base at NASA in Hampton. This is an open, tone (1477 Hz) accessed repeater. Trustee is Dave Holmes, K4UUI. Reps to the CVRA are K4UUI & WB4PFM.

LEXINGTON, VA WR4ABU

146.01/146.61 100 watts ERP 24 hours daily

This repeater which operates from atop Cole Mountain, 4020' MSL and 2500' HAAT, provides good mobile coverage to all points within an 80 mile radius of Lexington, Va. Base stations from 120 miles easily access this machine. Equipment consists of a GE MASTR feeding two antennas -- Hustler/Neutronics 6 dB on the receiver and 3 dB on the transmitter. This is an open, carrier accessed repeater. ID is via CW. There are plans to install a 6 meter machine on 52.01/53.01 this year. Trustee is Tom Gimbert, K4PQD. Arthur Smiley, WA4DUM is the Rep to the CVRA.

LYNCHBURG, VA — WR4ADY

146.34/146.94 — 55 watts — 24 hours daily

Paul Lilly, K4STE, owns and operates this repeater from his farm near Lynchburg. The GE MASTR repeater feeds a single Ringo at 88' HAAT & 1108' MSL. Mobile coverage is provided to the counties of Bedford, Campbell, and Amherst. Base stations from Altavista, Amhurst, Bedford, Concord, Appomattox, and Rustburg easily access this repeater. This is an open, carrier accessed repeater. Reps to the CVRA are WB4MOV and K4STE.

RICHMOND, VA. — WR4ACW

146.28/146.88 — 30 watts — 24 hours daily

The Richmond Amateur Telecommunications Society (RATS) operates this repeater which provides good mobile coverage in the counties of Caroline, Hanover, Louisa, Goochland, Powhaten, Chesterfield, Charles City, New Kent and King William. The GE Progress Line machine is a split site unit with two receiver sites, one north and one south of town, The transmitter is also located at the site on the south side -- located on US Hwy 60 west of Richmond. This is an open repeater, with tone access (1336 Hz). The machine is equipped with an autopatch which is available for members only. Repeater Trustee is John Alford, WA4VOS. Reps to the CVRA are WA4VOS and K4ARO.

ROANOKE/SALEM, VA. — WR4AFE

146.28/146.88 — 400 watts ERP — No scheduled hours

L. A. Dyson, W4PDL, owns and operates this repeater from a site on Little Brushy Mtn near Salem, Va. Mobile coverage is provided to Roanoke, Franklin, and Bedford counties. Base stations from Lynchburg, Bedford, Danville, Rocky Mount, and Blacksburg easily get into this machine. The Motorola repeater feeds two antenna systems spaced 100' apart horizontally. The receiving antenna system consists of two 5 element quads, and the transmitting system two 3 element quads. HAAT is 278' and 1850' MSL. This is an open, carrier accessed machine. ID is via a female voice. Reps to the CVRA are W4PDL and W4GJY.

ROANOKE, VA. — WR4AMQ

146.13/146.73 — 25 watts — 24 hours daily

Jim Clark, K4LZU, is currently installing a repeater to be located on Reeds Mtn, east of Roanoke. Mobile coverage is expected to include the counties of Roanoke, Botetourt, Franklin, Bedford, Campbell, Montgomery, and Amherst. Base stations in Lynchburg, Danville, Blacksburg, Stanton, Lexington, and Bedford should be able to operate this repeater. The Motorola receiver and GE transmitter will feed through a duplexer into a ¼ wave antenna. This will be an open, carrier accessed repeater. ID will be via CW and voice. An autopatch will be available in the future. Plans are also being made for additional repeaters on 430 and 50 MHz. Reps to the CVRA are K4LZU and WA4HNG. The transmitting antenna will be at 1500' HAAT and 2500' MSL.

SUFFOLK, VA. WR4AKS

146.40/147.00 40 watts 24 hours daily

The Nansemond Repeater Group operates WR4AKS which provides mobile coverage to Isle of Wight, Southampton, Surry, Sussex in VA, and Hertford, Gates, Camden, & Pasquotank in NC. Base stations in Norfolk, Virginia Beach, Richmond, Accomac, Emporia, Windsor, and Manteo easily access this machine. Repeater equipment consists of a Heath HW-202 and HA-202 amplifier, feeding through a Phelps Dodge 6 cavity duplexer into a Ringo AR-2 antenna at 85' HAAT & 135' MSL. The repeater site is the QTH of WA4HMT, Lloyd Gatling, who is the Trustee. This is an open, carrier access repeater. The repeater will be moved to a new site near Driver, Va. on a 400' tower in the near future. The autopatch is available by a 3 digit access code based on the telephone exchange prefixes in the Suffolk, Chuckatuck, Whaleyville, and Holland exchanges. ID is via CW. Reps to the CV_A are WB4UWE and WA4HMT.

VIRGINIA BEACH, VA WR4AAC

146.37/146.97 60 watts 0700 - 0200 daily

The Virginia Beach Amateur Radio Club operates WR4AAC which provides mobile coverage to the greater Tidewater area. Base stations from Norfolk, Suffolk, and Williamsburg easily access this machine. The Motorola repeater feeds into two homebrew collinears separated 125' vertically. The repeater site is at the Princess Anne Plaza fire station with antennas on a city owned tower. The transmitter antenna is at 125' HAAT & 140' MSL. This is an open, carrier accessed machine. ID is via CW. The autopatch access code is available from any club member. Repeater Trustee is Cecil Oliver, WA4VQQ. Reps to the CVRA are WA4VQQ and WN4NXV.

This post card provides the membership with the details of the latest repeater to go on the air in the greater Charlotte area. Postmaked April 28, 1975.

For your Association information:(in case my 8/74 notification to Joe Cherry went astray)

WR4AJX 147.24 in, 147.90 out 20F3, 125' AHAAT, 200W ERP. 4 miles S of Mint Hill, NC near FAIRVIEW

GE MASTR PRO all the way,100% professional. Tone burst & CG installed for use if needed. Open rptr, except no kids, no preachers, no ARRL.
I own it, lock,stock,&barrel.
By the way, 147.30 is a Simplex channel all over the US and has been during the 25+ years I have been on it- hence my choice of the next channel down for input. Low in hi out favors mobiles 3 db or more because of antenna bandwidth,etc on cars.
The clown that proposed hi in lo out didnt think or measure results!

F.C. HERVEY K4ETZ/WR4AJX

R1 B336 Indian Trail 28079 NC

DISTRICTS OF THE CAROLINAS-VIRGINIA REPEATER ASSOCIATION, INC.

Member Repeaters

MOUNTAIN
Director: WB4MOV
Vice Dir: W4PDL

Galax, Va.	WR4AHR	69/09
Roanoke, Va.	WR4AFE	28/88
Lynchburg, Va.	WR4ADY	34/94
Roanoke, Va.	WR4AMQ	13/73

NORTHERN
Director: K4ARO
Vice Dir: K4PQD

Lexington, Va.	WR4ABU	01/61
Richmond, Va.	WR4ACW	28/88
Richmond, Va.	WR4	450 MHz

BAY
Director: WA4MMK
Vice Dir: WA4JZX

Chesapeake, Va.	WR4ACN	19/79
Elizabeth City, NC	WR4ADN	46/06
Hampton, Va.	WR4AFT	34/94
Manteo, NC	WR4AKB	34/94
Murfreesboro, NC	WR4AFB	31/91
Suffolk, Va.	WR4AKS	40/00
Virginia Beach, Va.	WR4AAC	37/97

WESTERN
Director: WB4ROI
Vice Dir: WA4NUO

Asheville, NC	WR4AKR	16/76
Asheville, NC	WR4AGF	22/82
Asheville, NC	WR4ALC	04/64
Anderson, SC	WR4AIO	37/97
Greenville, SC	WR4ABG	34/94
Greenville, SC	WR4ADG	01/61
Pickens, SC	WR4ADP	40/00

PIEDMONT:
Director: W4BUZ
Vice Dir: W4IRE

Greensboro, NC	WR4	16/76
High Point, NC	WR4AFV	19/79
Lenoir, NC	WR4ACM	25/85
Lexington, NC	WR4ABX	31/91
Mt. Airy, NC	WR4ACJ	37/97
Reidsville, NC	WR4ADE	25/85
Salisbury, NC	WR4AAA	13/73
Winston-Salem, NC	WR4ACA	04/64
Roaring Gap, NC	WR4AGS	22/82

EASTERN
Director: WA4WTX
Vice Dir: K4ITL

Burlington, NC	WR4AIF	07/67
Durham, NC	WR4AGC	22/82
Durham, NC	WR4AJV	75/15
Fayetteville, NC	WR4ADK	31/91
Raleigh, NC	WR4ACF	04/64
Smithfield, NC	WR4ALY	43/03
Durham, NC	WR4AGC	220 MHz
Raleigh, NC	K4ITL	28/88

CENTRAL
Director: K4WHQ
Vice Dir: WB4NDB

Charlotte, NC	WR4AEU	34/94
Charlotte, NC	WR4ALO	46/06
Charlotte, NC	WR4ABT	22/82
Forest City, NC	WR4AHA	07/67
Rock Hill, SC	WR4AJO	43/03
Shelby	WR4ABF	28/88

SOUTHERN
Director: K4FR
Vice Dir: K4OKD

Charleston, SC	WR4AFX	34/94
Columbia, SC	WR4ABA	28/88
Columbia, SC	WR4ABA	34/94
Florence, SC	WR4AGM	37/97
North Augusta, SC	WR4ABB	13/73

COASTAL
Director: WA4UQC
Vice Dir: W4NTQ

Aurora, NC	WR4ABQ	34/94
Beulaville, NC	WR4ADS	34/94
Greenville, NC	WR4AMB	69/09
Grifton, NC	WR4ABP	16/76
Jacksonville, NC	WR4AJG	40/00
Laurinburg, NC	WR4AIB	07/67
Seven Springs, NC	WR4AEF	25/85
Wilmington, NC	WR4AHL	22/82

(WILMINGTON, NC) --- WR4AHL, 22/82, may have an autopatch in its fuyure if some 450 equipment can be located for use in a link which they will have to set up. Any help?..... see Frank Haines, WA4GDS.

(GREENSBORO, NC) --- A new repeater is on the air in Greensboro on 72/12 using the temporary call of WR4ABL. The split site machine has its receiving antenna located on a water tank in Western Greensboro @ 135'. The transmitter is temporarily located at the QTH of K4CJZ. Ultimately the Xmtr will be placed in the Governmental Center using a Stationmaster antenna @ 50'. Coverage for Guilford county is planned for mobiles. The machine will be sponsored by the Greensboro/Guilford County Civil Preparedness Office.

(BURLINGTON, NC) ---- WR4AKY, 78/18 is under construction. This repeater was originally scheduled for 72/12 but now has been shifted.

(GREENVILLE, NC) ---The following new Officers and Directors of ENC Repeater Inc. (WR4ABP, 16/76, Grifton) were elected at the 4th annual membership meeting on Sunday March 9, 1975: Pres: Curt Powell, WB4WAA; VP: Charles Cowell, K4KLJ; Sec/Treas: Bill Page, WB4LWX; and 6 Directors: Bert Carter, WA4TLI; Jim Cason, WB4CCU; Jack Edwards, W4DXJ; Jim Evans, K4PRJ; Charles Garoutte, W4NXY, and Charles Wells, K4SKI.

(AUGUSTA, GA) ---- Reports from the Augusta area indicate that the 24/90 repeater near Charlotte is keying up the 90/30 repeater there. 90/30 is the normally recognized channel based on ARRL's recommended Band Plan.

(BURLINGTON, NC) --- W4IZI, Lindsay Cleveland, who is the Associate Membership Chairman of CVRA, and who prepares the quarterly newsletters for mailing, reports that some members have not been receiving their newsletters. If you know of someone, or hear of someone who has not received their newsletters, please contact W4IZI or K4GHR. The newsletter is being mailed Second Class and some delays have occurred.

(FAYETTEVILLE, NC) --- If you are near the Fayetteville area you may want to listen to the code practice sessions being held on WR4ADK, 31/91, on Monday, Wednesday, and Friday evenings at 9 PM.

(LYNCHBURG, VA) --- Bob Voss, WB4WVC, will begin serving as the News Editor for Virginia for the CVRA "JOURNAL" beginning with the next issue. If you live in Virginia, and have any news that you would like to see printed in this newsletter please contact Bob at 101 Fleetwood, Lynchburg, Va. 24501.

(ASHEVILLE, NC) --- The FCC conducted amateur exams in Asheville on Mar 19, 1975. This was the first time exams have been conducted in that area and the results were very good. Over 100 persons were on hand to take the amateur and commercial exams. W4AFM, Bill Hayes, was responsible for getting the FCC to come to Asheville. Bill reports that he picked up some good news for Conditionals that are called in for re-examination.....if you fail the test on re-examination, you can take it again after the normal 30 day waiting period. There has been some confusion on that point in the past.

(FAYETTEVILLE, NC) ---- The Cape Fear ARS still conducts their net on 31/91 each evening at 1930. Over 20 check-ins per night have been averaged.

(CHARLOTTE, NC) ---- WR4ABK will soon be back on the air on 147.78/147.18 from its new site atop the 12 story Holiday Inn at Carowinds on I-77 just south of Charlotte. The VHF Engineering Repeater will feed through a Phelps Dodge duplexer into a Stationmaster antenna. Power out will be around 15 watts. The machine will be owned and operated by WA41PQ and WB4YFC. Hopefully it will be on by mid June.

HOW TO INTERFACE THE TRIMLINE TOUCHTONE PAD TO YOUR FM RIG

By: Herman Cone, WB4DBB, Rt. 5, Box 341, Chapel Hill, NC 27514

There have been many articles on hooking up Touch-Tone pads to 2-meter FM transcievers written recently, but there have been very few articles showing how to wire up the Trimline pad--the type that is used in the handset with the pad built in. I have been using one for several years and several other amateurs have asked me how I hooked mine up, so here it is for others to see.

First, after removing the back cover, the flexible printed circuit board running the full length of the handset should be completely removed. Neither it nor any components on it are used. This printed circuit "board" is attached to the tone generator board only by the seven screws at the top of the tone generator board. It is easily removed.

Using the wiring diagram shown, connect the 12 vdc supply through a 680 ohm resistor to the two indicated screws. If a 9 vdc battery is used for the supply voltage, use a 470 ohm resistor. Likewise, wire up the ground lead to the two screws shown on the diagram.

The audio is tapped off of the cold end of the 680 ohm resistor through a 10 mfd, 25 vdc electrolytic capacitor, and this in turn goes through a 10 kohm pot to ground. The wiper of the pot can go directly to your rig, provided you need a lot of signal (up to several volts of audio). Most modern solid-state rigs (such as Regency, Drake, Icom, etc.) require much less than this amount for the normal 3-4 KHz of deviation usually needed to operate the autopatch circuitry.

A simple resistive voltage divider will reduce the audio to a more reasonable level for such rigs. By choosing the proper value for R_X, one can smoothly move the deviation from 0 KHz to 10 or 15 KHz over the entire rotation of the pot. As a result, no sudden drastic jumps in level will occur when one just barely touches the level control. The 33 Kohm resistor provides such resolution for my IC-22. If one cannot get enough audio from the pad after hooking it up, Make R_X smaller. If the deviation jumps "sky high" when one turns the pot 1/100 of a turn clockwise, make R_X larger.

A problem that many amateurs have with Touch-Tone pads is that the low frequencies come through stronger than the high ones. In most cases this occurs because a small capacitor is in series with the output line. In this circuit, the 10 mfd capacitor is essentially a short circuit to all tone frequencies, so all of them can go through it with no drop in level. The resistors in the divider circuit also pass all frequencies equally.

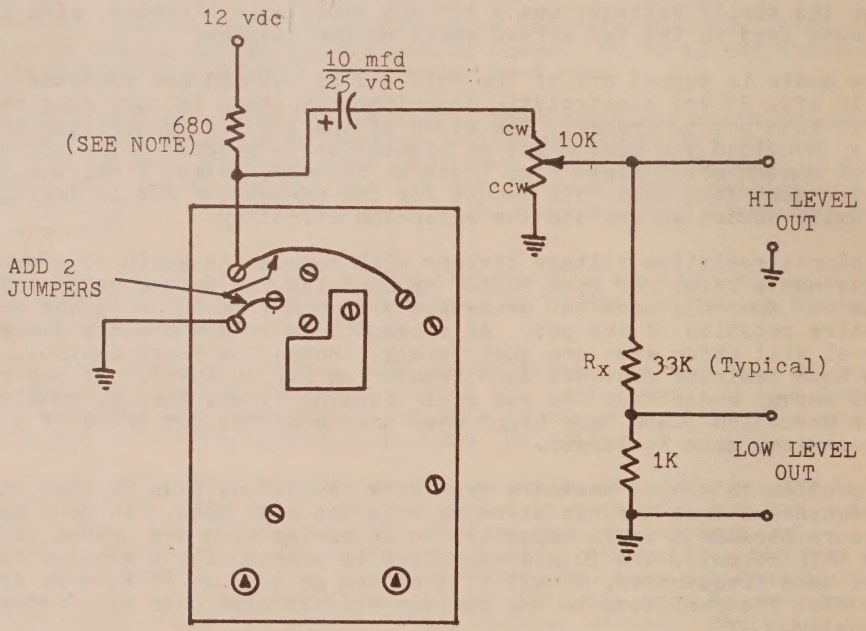
The earpiece in the handset can also be used, and another mike element (to replace the carbon one) installed to have a fully functional handset. A PTT switch and a pad/mike switch can also be added for more flexibility.

There is one more point worth mentioning that may save a few headaches. Sometimes one may have the proper deviation level (approx. 3.5 KHz) to access the autopatch, but nothing works. Before one starts tweaking the

two coils to adjust the frequencies, ask someone to listen to your signal or look at your signal on a scope to make sure that the Touch-Tone audio is not getting clipped. The Icom and Regency rigs are especially notorious for doing this, and the reason is that the mike gain control is set too high for the deviation pot level. This tends to square-off the tones, and the autopatch may not respond. Try adjusting the controls for higher peak deviation and lower mike gain (which also means less background noise when talking into the mike), and one will more than likely be in good shape.

(Editor's Note: Touch-Tone and Trimline are registered trademarks of the Western Electric Company.)

Although this article has been centered primarily with the Trimline pad, it will work equally well with the standard pads in wide use. Just find the right wires (see ARRL FM & REPEATER MANUAL) and use this circuit.



Note: Make this resistor 470 ohms if a 9 vdc battery is used instead of 12 vdc.

73 hotline

Peterborough NH 03458

HAM SALE OF CB LINEARS

Now that the sale of CB linears has been prohibited . . . and the possession of them by CBers made illegal . . . a question arose about whether amateurs could buy and sell them. The FCC says yes, you can sell a 10m amplifier as long as you sell it to another licensed amateur — and you'd better get his signature and callsign on your receipt.

CLASS E TABLED

Last minute: The Commission reportedly has decided to table further consideration of Class E CB on 220 MHz indefinitely — at least until the end of 1975 — awaiting further developments in 20120 (CB restructuring), CB auto identifying, and 20282 (amateur restructuring). Under way will be investigation of possibility of 216-220 MHz band (right next to channel 10 TV 210-216 MHz) which Canada is considering for GRS — also considering 902-904 MHz in light of 900 MHz land mobile band and UHF devices it will bring — and expansion of 460 Class A CB band.

CLEGG GOES DIRECT!

The April ads for the new Clegg synthesized rig carry the announcement that this is available direct from the factory.

The pattern of thinking closely paralleled that of Genave when they went to direct sales a few months ago. Research showed that a major part of the sales of the large dealers was by mail order. Experience showed that the factory had to do most of the servicing on their 27B. The clincher probably was a review of the accounts receivable from dealers, with some of the big ones running 120 days and longer, and even then there was often a big fight to collect. Who needs the aggravation?

The usual dealer markup of between 33% and 50% on ham gear — which amounts to a 25% to 33% discount from list prices, used to leave dealers with enough profit on each sale to pay for advertising, stocking the unit, training the salesman to sell it, shipping costs, and repairs. As discounting became a way of life these frills had to be dropped by many dealers, throwing the costs back to the manufacturer.

Clegg, in addition to direct factory marketing of their own equipment, is working on several deals to handle quality ham equipment made by other manufacturers who face similar problems. The fact is that it is not inexpensive to establish a direct sales effort — this means advertising in substantial amounts — it means BankAmericard or Master Charge credit — custom shipping — and more correspondence. Once this has all been set up it can just as well handle the sales for several products.

REPEATER TOWER PROBLEM

The FCC has requested that word be passed that repeater groups who are planning on using commercial towers for their antennas, even just for receiving antennas, should keep in mind that towers which come under the FAA restrictions and which require painting and lighting, even though currently being used by radio, television or communications businesses, necessitate the filing of a Form 714 with the repeater application. The problem is this: If the business user should move out and leave the tower to the repeater, then it will be the responsibility of the repeater group to upkeep the painting and lighting. The FCC wants to keep tabs on this.

HOW's THE WEATHER?

From the Wall Street Journal, kindly supplied by Ken WB5ECJ, the National Weather Service is expanding the network of radio stations operating on 162.40 and 162.55 MHz, transmitting continuous, five minute weather reports. There are now 73 stations serving half the U.S. population. Fifty three additional stations are planned by July 1976. Ultimately, there will be 331 stations serving 90% of the population.

Of special interest is a tone alert feature incorporated in the system. Receivers can be muted until signalled when the forecaster has some news of significance, such as a tornado.

HUMOR . . .

A small-town manufacturer pondered over a Federal questionnaire that asked, "How many employees do you have, broken down by sex?" He finally answered: "None that I know of. Our main problem is alcohol."

It's better to construct the future than to varnish the past.

QRZ
Pilot Knob Amateur
Radio Club

CALCULATOR FUN

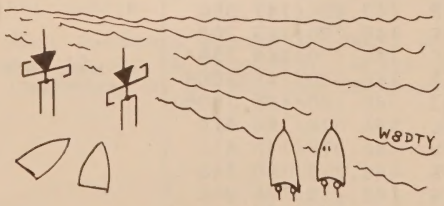
If you wonder who is getting all the profit from the energy crisis, try the following on your pocket calculator. There are 14,215,469 cars in California and each uses an average of 5 gallons of gasoline per week (lot of VWs and Honda Civics- MHz). To find out where the money goes, multiply it out and turn the calculator upside down to read.

. . . K9GSS, "The Old Lid," Nov 74 (*Quad City ARC*, Rock Is., Ill).

FCC RULES AVAILABLE

Time was when you could get a copy of the FCC ham regulations for a pittance from the Government Printing Office. No more — a recent bill for updating the rules was for $3.95!

73 Magazine has done something about this — they've reprinted the rules in a small booklet and have made it available for 50¢. These are available from 73, Peterborough NH 03458 postpaid. Clubs may have them at a slight discount — 20% on orders of ten or more copies — that's 40¢ each in bulk. Every amateur should have a copy — and read it.



"Those 'beach bums' are showing off their muscles again."

FLORIDA REPEATER COUNCIL REPEATER DIRECTORY

Belle Glade	WR4	146.370/146.970*
Boca Raton	WR4ACV	146.220/146.820*
Bunnell	WR4	147.840/147.240*a
Callahan/Fern.	WR4ALA	146.010/146.610
Daytona Beach	WR4ADC	146.340/146.940
	WR4AKH	147.750/147.150*a
	WR4	146.235/146.835
Ft. Lauderdale	WR4ADU	146.310/146.910
	WR4	147.780/147.180
Ft. Myers	WR4AES	146.190/146.790*
Ft. Pierce	WR4AHW	146.130/146.730*
Ft. Walton Bch	WR4ABZ	146.190/146.790*
Gainesville	WR4ACE	146.220/146.820*
		146.055/146.655
Haines City	WR4	146.010/146.610
Hallandale	WR4ACC	146.250/146.850*
Jacksonville	WR4AAF	146.160/146.760*+
	WR4AFL	146.400/147.000
	WR4AHX	146.280/146.880
	WR4AHY	146.070/146.670b
	WR4AKP	146.250/146.850
	WR4	146.310/146.910
Key Largo	WR4	146.070/146.670
Key West		146.130/146.730
Leesburg	WR4	146.370/146.970
Melbourne	WB4KBG	146.250/146.850
	WR4AEE	147.705/147.105*
	WR4	146.430/147.030
Merritt/Cocoa	WR4AFI	146.280/146.880*
Miami	WR4AHN	147.690/147.090
	WR4AHU	146.160/146.760*
	WR4AID	146.400/147.000
	WR4AIY	147.900/147.300
	W4MKD	C L O S E D
Naples	WR4	146.070/146.670
New Prt Richey	WR4	146.070/146.670
Ocala	WR4ALJ	146.010/146.610
Orlando	WR4AEL	146.220/146.820
	WR4AEQ	147.780/147.180*
	WR4AER	147.720/147.120*a
	WR4AFO	146.160/146.760*
	WR4AGW	146.040/146.640
	WR4AJC	146.340/146.940
	WR4AJM	146.190/146.790*a
	WR4AJR	147.690/147.090
	WR4AJS	146.100/146.700
	WR4AKC	146.130/146.730*
Panama City	WB4QER	146.100/146.700*
Pensacola	WR4ACZ	146.160/146.760*
	WR4ADL	146.070/146.670
	WR4AFW	146.010/146.610
	WR4AIK	146.340/146.940
	WR4AIW	146.250/146.850
Plantation	WR4AEP	146.190/146.790*
Pompano Beach	WR4AJZ	146.010/146.610
	WR4AKA	147.990/147.390
	WR4	147.930/147.330
Sarasota	WR4	146.220/146.820
St Petersburg/ Clearwater	WR4AGO	C L O S E D
	WR4AGP	C L O S E D
	WR4AKU	146.400/147.000
	WR4AKV	146.370/146.970*
	WR4ALM	147.660/147.060
	WR4ALN	146.340/146.940c
Starke	WR4	146.130/146.730
Tallahassee	WR4AAB	146.160/146.760
		146.340/146.760
Tampa Bay	WR4AFJ	C L O S E D
	WB4HAE	146.160/146.760*
		146.250/146.760d
	WB4QEN	147.750/147.150
	WR4	146.280/146.880
	WR4	147.840/147.240
Titusville	WR4AKK	146.310/146.910
West Palm Bch	WR4AFM	146.280/146.880+
	WR4AIS	146.100/146.700*
	WR4AKX	146.340/146.940

Additions:

Disney World	WR4	147.90/147.30
Ormand Beach	WR4	147.99/147.39
Stuart	WR4	146.46/147.06

* Autopatch
\+ 911 EMERGENCY AUTO-DIAL (ARGUS)
a. Linked - Mid Florida Repeater System
b. Scheduled for later operation
c. Emergency Portable Rptr

Thanks for this list to the
FLORIDA REPEATER COUNCIL
6563 Sapphire Drive
Jacksonville, Fla. 32208

Information current Feb 1975

(MORGANTON, NC) ..... Group here planning on a repeater for 147.75/147.15. WB4UDS is involved in the project among others. A good site is planned.

(BEAUFORT, SC) .... The Coastal Amateur Radio Association is working on a repeater, tentatively planned for 146.31/146.91. The machine will be at the 400'-500' level on an ETV tower presently under construction near Green Pond, 22 miles north of Beaufort, SC. The repeater will have an output of 25-30 watts and should fill the gap between the Charleston and Savannah very well. K4KBI and WB4PVL are members of the group working on the machine.

(SAVANNAH, GA) ..... The 28/88 machine here is now up at a good elevation and provides mobile coverage north of Savannah along US 17 and I 95. Can anyone provide us the call of this repeater and the address of the Trustee or Club?

(GREENVILLE, SC) .... The 22/82 repeater here apparently provides good coverage around the Greenville area. Can someone help us out with a call and the name of the Trustee?

(ASHEVILLE, NC) ..... Seems like the 04/64 machine, WR4ALC is becoming the gathering place for OSCAR operators. Before and after every pass, the group gets together and exchanges notes. If you are interested in OSCAR activity, jump in on 04/64.

(NEWINGTON, CONN) .... Don't forget the VHF QSO Party June 14-16, 1975. The contest begins at 1900 GMT Saturday June 14 and ends at 0600 GMT Monday June 16. Entrants may operate no more than 28 out of the 35 hours. Contacts must be made on bands above 50 mHz. More details in May QST.

(WASHINGTON, DC) .... The Foundation for Amateur Radio, Inc. has announced that it will award three scholarships for the acedemic year 1975-76 to licensed amateurs, General Class or higher, planning a full time course of study beyond High School. More details and application blanks may be obtained from the Chairman, Scholarship Committee, 8101 Hampden Lane, Bethesda, Md. 20014. Requests must be postmarked before June 1, 1975.

(LYNCHBURG, VA) .... The Lynchburg Amateur Radio Club provides a Crystal Ordering service available to all amateurs needing crystals for GE equipment. An order form and further details may be obtained by writing The Lynchburg ARC, Inc, P. O. Box 4242, Lynchburg, Va. 24502. Attn: Lyn White, K4AAB

(CHARLESTON, SC) .... The Charlestowne Hamfest will be held July 12 & 13, 1975. Grand Prize will be a color TV or Metrum II. Talk in will be on 34/94 and on 52 simplex. More details available by writing Charlestowne Hamfest, P. O. Box 3643, Charleston, SC 29407.

(WINSTON-SALEM, NC) .... There will be an Antique Wireless Association Meeting in Winston on July 11, 1975. A Flea Market will also be held featuring equipment dating back before many of us were born. Really? More details from Chuck Brydges, W4WXZ.

(RESTON, VA) .... The 1975 ARRL National Convention will be held in Reston, Va. at the Sheraton Inn, September 12, 13, & 14, 1975. Additional details may be obtained from Registration Chairman, P. O. Box 682, McLean, VA 22101

ADDRESS CORRECTION REQUESTED

CAROLINAS - VIRGINIA REPEATER ASSN.
Post Office Box 3325
Burlington, North Carolina 27215

BULK RATE
U. S. POSTAGE
PAID
BURLINGTON, N. C. 27215
PERMIT NO. 271

BILL FINCH W4EHF
818 EMELINE AVE
FAYETTEVILLE, NC 28303

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APPLICATION FOR ASSOCIATE MEMBERSHIP
CAROLINAS-VIRGINIA REPEATER ASSOCIATION

NAME: _____ CALL: _____ DATE: _____

ADDRESS: _____ PHONE: _____

CITY: _____ STATE: _____ ZIP: _____

MEMBER OF ARRL? _____ MY HOME REPEATER IS: _____

Mail to:

Enclosed is: _____ $ 2.00/one year Carolinas-Virginia Repeater Assn.
Lindsay Cleveland, W4IZI
_____ $ 4.00/two years P. O. Box 3325
Burlington, NC 27215

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